

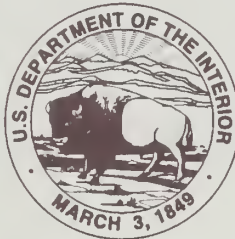


Technical Note 404

Analyses of Natural Gases, 1996-1997

By B.D. Gage and D.L. Driskill
September 1998

U.S. Department of the Interior
Bureau of Land Management



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Analyses of Natural Gases, 1996-97

B.D. Gage¹ and D.L. Driskill²

Abstract

This publication contains analyses and related source data for 167 natural gas samples from 17 states. Of the total samples, 89 were collected during calendar years 1996-97. The remainder were collected earlier, but releases granting permission to publish were received at a later date. None of the analyses have been previously published in annual reports. All samples were obtained and analyzed as part of the U.S. Department of the Interior—Bureau of Land Management investigations of the occurrences of helium in natural gases of countries with free-market economies. This survey has been conducted since 1917. The analyses published herein were made by mass spectrometer and chromatograph.

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Introduction

This Bureau of Land Management publication contains analyses and related source data for 167 natural gas samples from 17 states. None of the analyses have been previously published in annual reports. All samples were obtained and analyzed as part of the Bureau of Land Management investigations of the occurrences of helium in natural gases of countries with free-market economies. This survey has been conducted since 1917. The analyses published herein were made by mass spectrometer and chromatograph. The results of these investigations are published annually or biennially to make the information available to the petroleum industry and the general public. Forty-one publications have presented the results of 15,891 gas analyses performed through 1995. The first three bulletins (1-3)³ contain analyses and related source data on 5,218 gas samples collected from 1917 through 1960. These bulletins have been supplemented annually or biennially by information circulars and technical notes (4-17, 19-24, 26-30, 32-36, 38-41) containing 10,673 analyses of samples collected since 1960.

In 1976, a compilation of the analyses made prior to 1975 was prepared by the U.S. Bureau of Mines and published by the National Technical Information Service of the U.S. Department of Commerce (18). The 1976 compilation contains 10,562 analyses of gas samples from gas and oil wells and natural gas pipelines in 37 states and 23 foreign countries.

Three other compilations of analyses have been published (25, 31, 37) by the U.S. Bureau of Mines. The first of these was published in 1982 and contained analyses performed prior to 1981. The 1982 publication contains 12,554 analyses of gas samples from gas and oil wells and natural gas pipelines in 39 states and 24 foreign countries and includes the analyses from the 1976 publication (25). The second of these compilations was published in 1987 and contains 14,242 analyses performed prior to 1986. The samples were taken from wells or pipelines in 40 states and 24 foreign countries (31). In 1991, a compilation was completed as a supplement to the 1987 publication and contains all analyses published from 1986 through 1990. The 1991 publication contains 920 samples from gas and oil wells and pipelines in 26 states and 2 foreign countries (37).

In addition to being in the publications, all analyses and related information published through 1995 are available on CD-ROM. The CD-ROM is available from the National Technical Information Service, Springfield, VA 22161 (1-800-553-NTIS). Orders should refer to Bureau of Land Management CD-ROM PB 97-502611. The update to the 1995 CD-ROM, which will include the 1996-97 analyses, will be sent to NTIS and should be available for purchase by the time this report is published.

The helium survey program is conducted by soliciting natural gas samples throughout the United States and other countries with free-market economies. Without the assistance of the petroleum industry, State and Federal agencies, and many individuals engaged in oil and gas exploration and production, the helium survey in its present scope would not be possible.

³ Numbers in parentheses refer to items in the list of previous publications at the end of this report.

Geologic Provinces of the United States

The tables include geologic province codes so each sample source can be located within a specific geologic province as defined by the Committee on Statistics of Drilling of the American Association of Petroleum Geologists.⁴ These provinces, which are given in the following list and shown in Figure 1, are delineated by political boundaries for convenience and for accommodation of data processing equipment. Not all of the provinces shown are gas-producing areas so many of the codes are not used in this publication. Since State or Federal ownership is not always known in offshore areas, only one code is used for each state. Due to the lack of information on the location of wells in Alaska, only one code, 972, is used for all wells.

The following list and Figure 1 are taken from the article cited in footnote 4.

Code	Province
100	New England Province
110	Adirondack Uplift
120	Atlantic Coast Basin
130	South Georgia-North Florida Sedimentary Province
140	South Florida Province
150	Piedmont-Blue Ridge Province
160	Appalachian Basin
200	Black Warrior Basin
210	Mid-Gulf Coast Basin
220	Gulf Coast Basin
230	Arkla Basin
240	Desha Basin
250	Upper Mississippi Embayment
260	East Texas Basin
300	Cincinnati Arch
305	Michigan Basin
310	Wisconsin Arch
315	Illinois Basin
320	Sioux Uplift
325	Iowa Shelf
330	Lincoln Anticline
335	Forest City Basin
340	Ozark Uplift
345	Arkoma Basin
350	South Oklahoma Folded Belt Province
355	Chautauqua Platform
360	Anadarko Basin
365	Cherokee Basin
370	Nemaha Anticline

⁴ Meyer, R.F. Geologic Provinces Code Map for Computer Use. AAPG Bull., v. 54, No. 7, July 1970, pp. 1301-1305.

Code	Province
375	Sedgwick Basin
380	Salina Basin
385	Central Kansas Uplift
390	Chadron Arch
395	Williston Basin
400	Ouachita Tectonic Belt Province
405	Kerr Basin
410	Llano Uplift
415	Strawn Basin
420	Fort Worth Syncline
425	Bend Arch
430	Permian Basin
435	Palo Duro Basin
440	Amarillo Arch
445	Sierra Grande Uplift
450	Las Animas Arch
455	Las Vegas-Raton Basin
460	Estancia Basin
465	Orogrande Basin
470	Pedregosa Basin
475	Basin-and-Range Province
500	Sweetgrass Arch
505	Montana Folded Belt Province
510	Central Montana Uplift
515	Powder River Basin
520	Big Horn Basin
525	Yellowstone Province
530	Wind River Basin
535	Green River Basin
540	Denver Basin
545	North Park Basin
550	South Park Basin
555	Eagle Basin
560	San Luis Basin
565	San Juan Mountain Province
570	Uinta Uplift
575	Uinta Basin
580	San Juan Basin
585	Paradox Basin
590	Black Mesa Basin
595	Piceance Basin
600	Northern Cascade Range-Okanagan Province
605	Eastern Columbia Basin
610	Idaho Mountains Province

Code	Province
615	Snake River Basin
620	Southern Oregon Basin
625	Great Basin Province
630	Wasatch Uplift
635	Plateau Sedimentary Province
640	Mojave Basin
645	Salton Basin
650	Sierra Nevada Province
700	Bellingham Basin
705	Puget Sound Province
710	Western Columbia Basin
715	Klamath Mountains Province
720	Eel River Basin
725	Northern Coast Range Province
730	Sacramento Basin
735	Santa Cruz Basin
740	Coastal Basins
745	San Joaquin Basin
750	Santa Maria Basin
755	Ventura Basin
760	Los Angeles Basin
765	Capistrano Basin
800	Heceta Island Area
805	Keku Islands Area
810	Gulf of Alaska Basin
815	Copper River Basin
820	Cook Inlet Basin
830	Kandik Province
835	Kobuk Province
840	Koyukuk Province
845	Bristol Bay Basin
850	Bethel Basin
855	Norton Basin
860	Selawik Basin
863	Yukon Flats Basin
865	Lower Tanana Basin
867	Middle Tanana Basin
870	Upper Tanana Basin
873	Galena Basin
875	Innoko Basin
877	Minchumina Basin
880	Holitna Basin
885	Arctic Foothills Province
890	Arctic Slope Basin

Code	Province
900	Maine Atlantic offshore—general
901	Maine Atlantic offshore—State
902	Maine Atlantic offshore—Federal
903	New Hampshire Atlantic offshore—general
904	New Hampshire Atlantic offshore—State
905	New Hampshire Atlantic offshore—Federal
906	Massachusetts Atlantic offshore—general
907	Massachusetts Atlantic offshore—State
908	Massachusetts Atlantic offshore—Federal
909	Rhode Island Atlantic offshore—general
910	Rhode Island Atlantic offshore—State
911	Rhode Island Atlantic offshore—Federal
912	Connecticut Atlantic offshore—general
913	Connecticut Atlantic offshore—State
914	Connecticut Atlantic offshore—Federal
915	New York Atlantic offshore—general
916	New York Atlantic offshore—State
917	New York Atlantic offshore—Federal
918	New Jersey Atlantic offshore—general
919	New Jersey Atlantic offshore—State
920	New Jersey Atlantic offshore—Federal
921	Delaware Atlantic offshore—general
922	Delaware Atlantic offshore—State
923	Delaware Atlantic offshore—Federal
924	Maryland Atlantic offshore—general
925	Maryland Atlantic offshore—State
926	Maryland Atlantic offshore—Federal
927	Virginia Atlantic offshore—general
928	Virginia Atlantic offshore—State
929	Virginia Atlantic offshore—Federal
930	North Carolina Atlantic offshore—general
931	North Carolina Atlantic offshore—State
932	North Carolina Atlantic offshore—Federal
933	South Carolina Atlantic offshore—general
934	South Carolina Atlantic offshore—State
935	South Carolina Atlantic offshore—Federal
936	Georgia Atlantic offshore—general
937	Georgia Atlantic offshore—State
938	Georgia Atlantic offshore—Federal
939	Florida Atlantic offshore—general
940	Florida Atlantic offshore—State
941	Florida Atlantic offshore—Federal
942	Florida Gulf of Mexico offshore—general
943	Florida Gulf of Mexico offshore—State

Code	Province
944	Florida Gulf of Mexico offshore—Federal
945	Alabama Gulf of Mexico offshore—general
946	Alabama Gulf of Mexico offshore—State
947	Alabama Gulf of Mexico offshore—Federal
948	Mississippi Gulf of Mexico offshore—general
949	Mississippi Gulf of Mexico offshore—State
950	Mississippi Gulf of Mexico offshore—Federal
951	Louisiana Gulf of Mexico offshore—general
952	Louisiana Gulf of Mexico offshore—State
953	Louisiana Gulf of Mexico offshore—Federal
954	Texas Gulf of Mexico offshore—general
955	Texas Gulf of Mexico offshore—State
956	Texas Gulf of Mexico offshore—Federal
957	California Pacific offshore—general
958	California Pacific offshore—State
959	California Pacific offshore—Federal
960	Oregon Pacific offshore—general
961	Oregon Pacific offshore—State
962	Oregon Pacific offshore—Federal
963	Washington Pacific offshore—general
964	Washington Pacific offshore—State
965	Washington Pacific offshore—Federal
972	Alaska Arctic offshore—general
973	Alaska Arctic offshore—State
974	Alaska Arctic offshore—Federal
975	Alaska Bering Sea offshore—general
976	Alaska Bering Sea offshore—State
977	Alaska Bering Sea offshore—Federal
978	Alaska Pacific offshore—general
979	Alaska Pacific offshore—State
980	Alaska Pacific offshore—Federal
987	Minnesota Lake Superior offshore
988	Wisconsin Lake Superior offshore
989	Michigan Lake Superior offshore
990	Indiana Lake Michigan offshore
991	Illinois Lake Michigan offshore
992	Wisconsin Lake Michigan offshore
993	Michigan Lake Michigan offshore
994	Michigan Lake Huron offshore
995	Michigan Lake Erie offshore
996	Ohio Lake Erie offshore
997	Pennsylvania Lake Erie offshore
998	New York Lake Erie offshore
999	New York Lake Ontario offshore

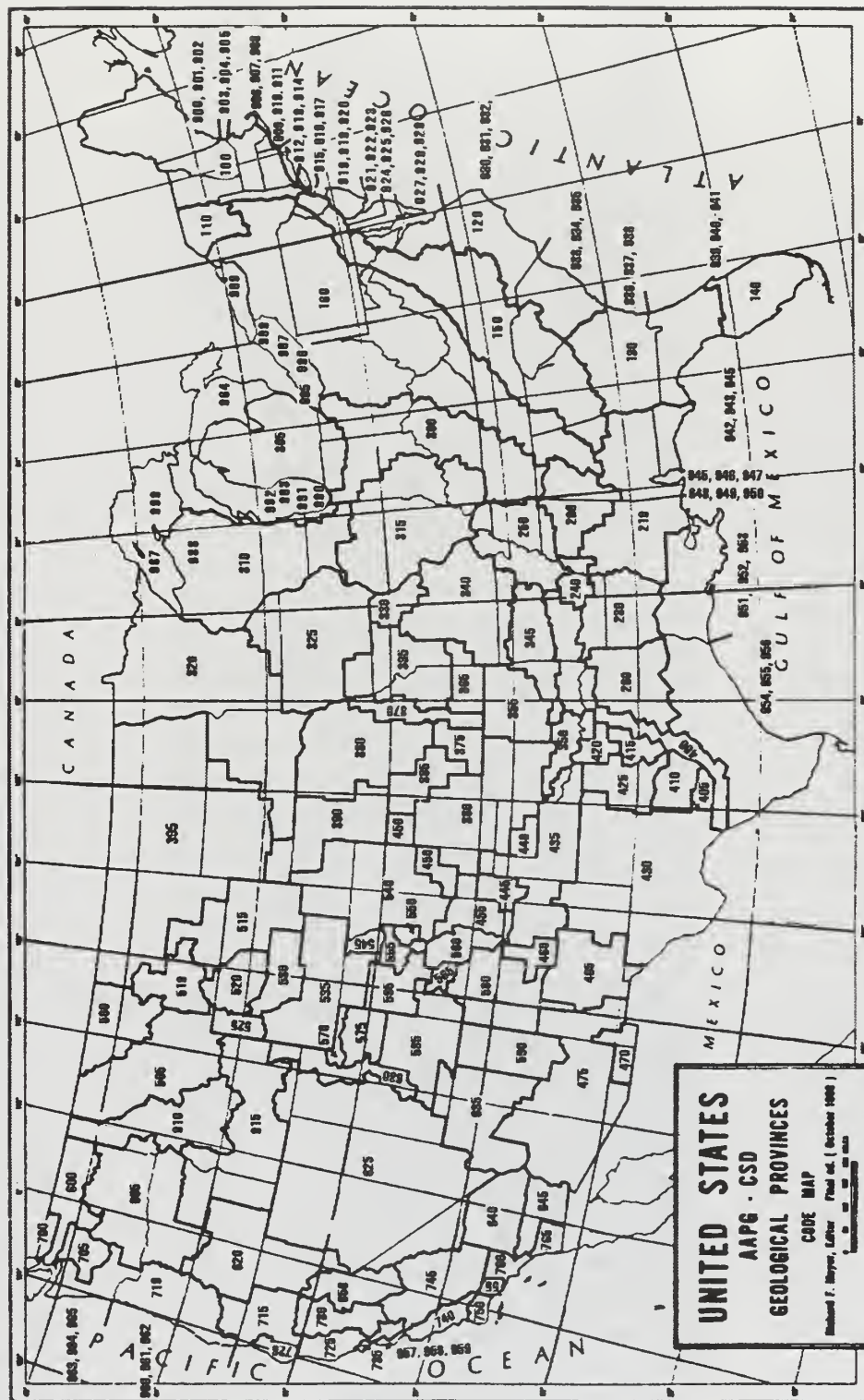


Figure 1. Geologic provinces of the United States.

Tables

The following tables include the results of analyses and related source data from the gas samples, which are divided into two groups as follows:

Table 1. Samples from gas and oil wells in the United States

Table 2. Samples from pipelines in the United States

The following list indicates the sources of the samples listed in the tables:

Source	Number of Samples	Tables	Source	Number of Samples	Tables
Alabama	2	1	New Mexico	15	1
Arizona	4	1	North Dakota	1	1
Arkansas	3	1	Ohio	1	1
Colorado	15	1	Oklahoma	14	1
Kansas	18	1	Pennsylvania	1	1
Louisiana	4	1	Texas	63	1,2
Mississippi	3	1	Utah	6	1
Montana	2	1	Wyoming	14	1,2
Nebraska	1	1			

All components of the analyses in the tables are reported to the nearest 0.1 percent (pct), except helium, which is reported to the nearest 0.01 pct. The word "trace" is used to denote quantities of helium of less than 0.005 pct and quantities of other components of less than 0.05 pct.

TABLE 1

Samples From Gas and Oil Wells
in the United States

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 20003	INDEX SAMPLE 19941	INDEX SAMPLE 19978
STATE.....	ALABAMA	ALABAMA	ARIZONA
COUNTY.....	LAMAR	TUSCALOOSA	APACHE
FIELD.....	UNNAMED	BROOKWOOD COAL DE GAS	WILDCAT
WELL NAME.....	ODOM 15-10 NO. 1	UNITED LAND NO. 32-9-2	RIDGEWAY STATE NO. 10-22
API.....	01-075-20923	01-125-23071	02-001-20308
LOCATION.....	SEC. 15, T17S, R15W	SEC. 32, T19S, R7W	SEC. 22, T10N, R30E
OWNER.....	MOON-HINES-TIGRETT OPER. CO.,	BLACK WARRIOR METHANE CORP.	RIDGEWAY ARIZONA OIL CORP.
COMPLETED.....	97/07/30	95/02/21	97/--/00
SAMPLED.....	97/10/22	96/06/08	97/03/25
FORMATION.....	MISS-CARTER	PENN-POTTSVILLE	PERM-BIG "A" BUTTE (SUPAI)
GEOLOGIC PROVINCE CODE...	200	200	590
DEPTH, FEET.....	4212	1573	1790
WELLHEAD PRESSURE, PSIG...	1349	NOT GIVEN	90
OPEN FLOW, MCFD.....	1429	2188	48
COMPONENT, MOLE PCT			
METHANE.....	91.0	96.0	0.0
ETHANE.....	5.2	0.1	0.0
PROPANE.....	1.2	0.1	TRACE
N-BUTANE.....	0.5	0.0	0.0
ISOBUTANE.....	0.2	TRACE	0.0
N-PENTANE.....	0.1	0.0	0.0
ISOPENTANE.....	0.2	0.0	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	1.3	2.9	0.0
OXYGEN.....	TRACE	0.6	0.0
ARGON.....	TRACE	0.1	TRACE
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.2	99.8
HELIUM.....	0.10	TRACE	0.15
HEATING VALUE*.....	1085	978	0
SPECIFIC GRAVITY.....	0.616	0.574	1.527

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19989	INDEX SAMPLE 19990	INDEX SAMPLE 19991
STATE.....	ARIZONA	ARIZONA	ARIZONA
COUNTY.....	APACHE	APACHE	APACHE
FIELD.....	WILDCAT	WILDCAT	WILDCAT
WELL NAME.....	STATE NO. 22-1X	RIDGEWAY STATE NO. 9-21	STATE NO. 3-1
API.....	02-001-20301	02-001-20309	02-001-20299
LOCATION.....	SEC. 22, T12N, R29E	SEC. 21, T9N, R31E	SEC. 3, T11N, R29E
OWNER.....	RIDGEWAY ARIZONA OIL CORP.	RIDGEWAY ARIZONA OIL CORP.	RIDGEWAY ARIZONA OIL CORP.
COMPLETED.....	97/06/01	97/--/00	95/09/13
SAMPLED.....	97/06/04	97/06/09	97/06/10
FORMATION.....	PERM-AMOS WASH	PERM-GRANITE WASH	PERM-AMOS WASH
GEOLOGIC PROVINCE CODE...	590	590	590
DEPTH, FEET.....	1537	2624	1676
WELLHEAD PRESSURE, PSIG...	200	120	165
OPEN FLOW, MCFD.....	1846	987	1347
COMPONENT, MOLE PCT			
METHANE.....	0.1 -----	0.0 -----	0.1 -----
ETHANE.....	0.0 -----	0.0 -----	0.0 -----
PROPANE.....	0.0 -----	TRACE -----	0.0 -----
N-BUTANE.....	0.0 -----	0.0 -----	0.0 -----
ISOBUTANE.....	0.0 -----	0.0 -----	0.0 -----
N-PENTANE.....	0.0 -----	0.0 -----	0.0 -----
ISOPENTANE.....	0.0 -----	0.0 -----	0.0 -----
CYCLOPENTANE.....	0.0 -----	0.0 -----	0.0 -----
HEXANES PLUS.....	0.0 -----	0.0 -----	0.0 -----
NITROGEN.....	13.3 -----	0.9 -----	7.6 -----
OXYGEN.....	0.0 -----	0.0 -----	0.0 -----
ARGON.....	0.2 -----	TRACE -----	0.1 -----
HYDROGEN.....	TRACE -----	TRACE -----	TRACE -----
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----	0.0 -----
CARBON DIOXIDE.....	85.2 -----	99.0 -----	91.6 -----
HELIUM.....	1.13 -----	0.07 -----	0.67 -----
HEATING VALUE*.....	1 -----	0 -----	1 -----
SPECIFIC GRAVITY.....	1.437	1.523	1.476

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19952	INDEX SAMPLE 19902	INDEX SAMPLE 19948
STATE.....	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY.....	JOHNSON	MILLER	WHITE
FIELD.....	LUDWIG	FOUKE W	CLAY
WELL NAME.....	NELSON SCHWARTZ NO. 4	THOMAS NO. 1	HOLLIMAN NO. 1-28
API.....	03-071-10714		03-145-10013
LOCATION.....	SEC. 7, T10N, R23W	SEC 17, T17S, R27W	SEC. 28, T9N, R7W
OWNER.....	STEPHENS PRODUCTION CO.	SWIFT ENERGY CO.	GRUBBS ENERGY CO.
COMPLETED.....	96/03/27	94/12/28	95/12/18
SAMPLED.....	96/08/05	96/01/17	96/08/01
FORMATION.....	PENN-PATTERSON	JURA-SMACKOVER	CAMO-ARBUCKLE
GEOLOGIC PROVINCE CODE...	345	230	345
DEPTH, FEET.....	3043	9545	6720
WELLHEAD PRESSURE, PSIG...	991	3102	1450
OPEN FLOW, MCFD.....	2693	1000	950
COMPONENT, MOLE PCT			
METHANE.....	98.3 -----	54.3 -----	95.4 -----
ETHANE.....	1.0 -----	5.9 -----	0.9 -----
PROPANE.....	0.1 -----	4.7 -----	0.1 -----
N-BUTANE.....	0.0 -----	3.1 -----	0.0 -----
ISOBUTANE.....	TRACE -----	2.7 -----	0.0 -----
N-PENTANE.....	0.0 -----	1.5 -----	0.0 -----
ISOPENTANE.....	0.0 -----	0.8 -----	0.0 -----
CYCLOPENTANE.....	0.0 -----	TRACE -----	0.0 -----
HEXANES PLUS.....	0.0 -----	0.7 -----	0.0 -----
NITROGEN.....	0.5 -----	19.4 -----	1.5 -----
OXYGEN.....	TRACE -----	0.0 -----	0.4 -----
ARGON.....	0.0 -----	TRACE -----	TRACE -----
HYDROGEN.....	TRACE -----	TRACE -----	TRACE -----
HYDROGEN SULFIDE**.....	0.0 -----	1.0 -----	0.0 -----
CARBON DIOXIDE.....	TRACE -----	5.9 -----	1.7 -----
HELIUM.....	0.09 -----	0.05 -----	0.04 -----
HEATING VALUE*.....	1016 -----	1114 -----	986 -----
SPECIFIC GRAVITY.....	0.562	0.924	0.585

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 10 SAMPLE 50572	INDEX 11 SAMPLE 50573	INDEX 12 SAMPLE 19912
STATE.....	COLORADO	COLORADO	COLORADO
COUNTY.....	CHEYENNE	CHEYENNE	CHEYENNE
FIELD.....	HARKER RANCH	HARKER RANCH	MAYFIELD
WELL NAME.....	EAST BIG TIMBER NO. 11-1	HELEN 41-34 NO. 1	ALAN NO. 23-20
API.....	05-017-07434	05-017-07185	05-017-07446
LOCATION.....	SEC. 1, T12S, R43W	SEC. 34, T12S, R43W	SEC. 20, T13S, R43W
OWNER.....	ANSCHUTZ EXPLORATION LTD.	ANSCHUTZ EXPLORATION LTD.	UNION PACIFIC RESOURCES CO.
COMPLETED.....	97/01/30	97/01/15	96/02/15
SAMPLED.....	97/06/30	97/06/19	96/03/01
FORMATION.....	PENN-MORROW	PENN-MORROW	PENN-MORROW
GEOLOGIC PROVINCE CODE...	450	450	450
DEPTH, FEET.....	5160	5190	5234
WELLHEAD PRESSURE, PSIG...	740	154	740
OPEN FLOW, MCFD.....	1100	275	1400
COMPONENT, MOLE PCT			
METHANE.....	21.8 -----	27.8 -----	29.0 -----
ETHANE.....	1.3 -----	2.4 -----	2.9 -----
PROPANE.....	1.0 -----	2.0 -----	2.1 -----
N-BUTANE.....	0.5 -----	1.1 -----	0.8 -----
ISOBUTANE.....	0.3 -----	0.4 -----	0.4 -----
N-PENTANE.....	0.2 -----	0.4 -----	0.1 -----
ISOPENTANE.....	0.2 -----	0.3 -----	0.2 -----
CYCLOPENTANE.....	0.0 -----	0.0 -----	0.0 -----
HEXANES PLUS.....	0.5 -----	0.8 -----	0.0 -----
NITROGEN.....	69.3 -----	61.0 -----	60.1 -----
OXYGEN.....	0.0 -----	0.0 -----	0.1 -----
ARGON.....	0.3 -----	0.2 -----	0.2 -----
HYDROGEN.....	0.0 -----	0.0 -----	TRACE -----
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----	0.0 -----
CARBON DIOXIDE.....	1.1 -----	0.8 -----	0.9 -----
HELIUM.....	3.55 -----	2.78 -----	3.22 -----
HEATING VALUE*.....	337 -----	497 -----	454 -----
SPECIFIC GRAVITY.....	0.886	0.891	0.859

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 13 SAMPLE 19838		INDEX 14 SAMPLE 19937		INDEX 15 SAMPLE 19901	
STATE.....	COLORADO	COLORADO		COLORADO	
COUNTY.....	CHEYENNE	GARFIELD		KIOWA	
FIELD.....	ROUND STONE	SOUTH CANYON		KICKING BIRD	
WELL NAME.....	COB TRUST 21-18 NO. 1	BAXTER PASS FEDERAL NO. 11-7		P.O.Z. 2-28 NO. 2	
API.....	05-017-07147	05-045-06984		05-061-06689	
LOCATION.....	SEC. 18, T16S, R45W	SEC. 11, T7S, R104W		SEC. 28, T20S, R49W	
OWNER.....	JAYARE EXPLORATION, INC.	TOM BROWN, INC.		FRANKLIN KENNEDY, TRUSTEE	
COMPLETED.....	90/04/10	95/12/00		94/07/27	
SAMPLED.....	94/11/02	96/04/29		96/01/15	
FORMATION.....	PENN-MORROW V-7	CRET-DAKOTA		PENN-MORROW U	
GEOLOGIC PROVINCE CODE...	450	595		450	
DEPTH, FEET.....	5220	5478		5058	
WELLHEAD PRESSURE, PSIG...	575	420		800	
OPEN FLOW, MCFD.....	3000	291		963	
COMPONENT, MOLE PCT					
METHANE.....	38.5	76.2		71.8	
ETHANE.....	6.1	3.7		10.1	
PROPANE.....	4.9	1.1		4.9	
N-BUTANE.....	3.8	0.3		1.1	
ISOBUTANE.....	1.7	0.2		0.5	
N-PENTANE.....	3.8	0.0		0.3	
ISOPENTANE.....	0.9	0.0		0.2	
CYCLOPENTANE.....	1.0	0.0		TRACE	
HEXANES PLUS.....	3.1	0.1		0.2	
NITROGEN.....	33.2	8.3		9.9	
OXYGEN.....	0.1	0.1		TRACE	
ARGON.....	0.1	0.1		TRACE	
HYDROGEN.....	TRACE	TRACE		TRACE	
HYDROGEN SULFIDE**.....	0.0	0.0		0.0	
CARBON DIOXIDE.....	0.4	9.5		0.6	
HELIUM.....	2.37	0.46		0.37	
HEATING VALUE*.....	1212	887		1121	
SPECIFIC GRAVITY.....	1.036	0.720		0.738	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 16 SAMPLE 50567	INDEX 17 SAMPLE 19894	INDEX 18 SAMPLE 19677
STATE.....	COLORADO	COLORADO	COLORADO
COUNTY.....	KIOWA	LAS ANIMAS	MESA
FIELD.....	NEE NOSHE	SPANISH PEAK	HUNTERS CANYON
WELL NAME.....	STATE NO. 1-15	TAYLOR NO. 22-7	HUNTERS CANYON UNIT 6 & 8
API.....	05-061-06733	05-071-06209	05-077-08505
LOCATION.....	SEC. 15, T19S, R47W	SEC. 7, T33S, R65W	SEC. 30, T8S, R100W
OWNER.....	J.W. GIBSON	EVERGREEN OPERATING CORP.	NATIONAL FUEL CORP.
COMPLETED.....	96/09/25	95/01/10	93/--/00
SAMPLED.....	96/07/30	95/12/12	93/10/00
FORMATION.....	PENN-MARMATON	CRET-VERMEJO	CRET-DAKOTA
GEOLOGIC PROVINCE CODE...	450	455	595
DEPTH, FEET.....	4301	1100	NOT GIVEN
WELLHEAD PRESSURE, PSIG...	1230	300	NOT GIVEN
OPEN FLOW, MCFD.....	2976	400	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE.....	51.4 -----	98.7 -----	87.5 -----
ETHANE.....	10.8 -----	0.0 -----	0.7 -----
PROPANE.....	6.6 -----	0.1 -----	0.2 -----
N-BUTANE.....	1.6 -----	0.0 -----	0.0 -----
ISOBUTANE.....	0.7 -----	0.0 -----	0.1 -----
N-PENTANE.....	0.2 -----	0.0 -----	0.0 -----
ISOPENTANE.....	0.4 -----	0.0 -----	0.0 -----
CYCLOPENTANE.....	--- -----	0.0 -----	TRACE -----
HEXANES PLUS.....	0.4 -----	0.0 -----	0.0 -----
NITROGEN.....	27.0 -----	0.2 -----	3.2 -----
OXYGEN.....	0.0 -----	TRACE -----	0.4 -----
ARGON.....	--- -----	0.0 -----	0.1 -----
HYDROGEN.....	--- -----	TRACE -----	TRACE -----
HYDROGEN SULFIDE**.....	0.1 -----	0.0 -----	0.0 -----
CARBON DIOXIDE.....	0.2 -----	1.0 -----	7.8 -----
HELIUM.....	0.71 -----	TRACE -----	0.07 -----
HEATING VALUE*.....	1007 -----	1002 -----	907 -----
SPECIFIC GRAVITY.....	0.840 -----	0.566 -----	0.653 -----

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 19 SAMPLE 20001	INDEX 20 SAMPLE 19744	INDEX 21 SAMPLE 19664
STATE.....	COLORADO	COLORADO	COLORADO
COUNTY.....	MOFFAT	RIO BLANCO	RIO BLANCO
FIELD.....	WEST SIDE CANAL	BLUE CLOUD	LOWER HORSE DRAW
WELL NAME.....	AVALANCHE (STATE) NO. 1	GOVERNMENT NO. 2-28	GOVERNMENT NO. 1-9
API.....	05-081-06902		05-103-07724
LOCATION.....	SEC. 24, T12N, R92W	SEC. 28, T4S, R102W	SEC. 9, T2S, R103W
OWNER.....	MULL DRILLING CO., INC.	ONIMEX PETROLEUM, INC.	PEASE OIL & GAS CO.
COMPLETED.....	96/10/29	79/07/10	75/11/26
SAMPLED.....	97/07/26	94/03/29	93/08/18
FORMATION.....	CRET-LEWIS	CRET-DAKOTA	CRET-MANCOS B
GEOLOGIC PROVINCE CODE...	535	595	595
DEPTH, FEET.....	3930	NOT GIVEN	3535
WELLHEAD PRESSURE, PSIG...	1540	1240	280
OPEN FLOW, MCFD.....	800	NOT GIVEN	50
COMPONENT, MOLE PCT			
METHANE.....	92.9 -----	44.8 -----	85.2 -----
ETHANE.....	4.4 -----	1.8 -----	7.8 -----
PROPANE.....	0.9 -----	0.7 -----	3.7 -----
N-BUTANE.....	0.3 -----	0.2 -----	1.0 -----
ISOBUTANE.....	0.3 -----	0.1 -----	0.5 -----
N-PENTANE.....	0.1 -----	0.1 -----	0.3 -----
ISOPENTANE.....	0.1 -----	TRACE -----	0.2 -----
CYCLOPENTANE.....	0.0 -----	TRACE -----	0.1 -----
HEXANES PLUS.....	0.1 -----	0.1 -----	0.2 -----
NITROGEN.....	0.5 -----	12.5 -----	0.6 -----
OXYGEN.....	0.1 -----	TRACE -----	0.1 -----
ARGON.....	0.0 -----	0.1 -----	TRACE -----
HYDROGEN.....	TRACE -----	TRACE -----	TRACE -----
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----	0.0 -----
CARBON DIOXIDE.....	0.4 -----	38.9 -----	0.3 -----
HELIUM.....	0.03 -----	0.60 -----	0.03 -----
HEATING VALUE*.....	1075 -----	530 -----	1181 -----
SPECIFIC GRAVITY.....	0.606	1.010	0.673

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 22 SAMPLE 19457		INDEX 23 SAMPLE 19947		INDEX 24 SAMPLE 19913	
STATE.....	COLORADO	COLORADO		COLORADO	
COUNTY.....	RIO BLANCO	RIO BLANCO		YUMA	
FIELD.....	TAIGA MOUNTAIN	TRAIL CANYON		OLD BALDY	
WELL NAME.....	FEDERAL NO. 7-20-1N-103W	TRAIL CANYON NO. 12-27		D. BROPHY NO. 21-24	
API.....	05-103-09515	05-103-09839		05-125-07569	
LOCATION.....	SEC. 20, T1N, R103W	SEC. 27, T4S, R101W		SEC. 24, T4N, R46W	
OWNER.....	BONNEVILLE FUELS CORP.	CABOT OIL & GAS CORP.		J-W OPERATING CO.	
COMPLETED.....	92/02/06	96/03/21		84/10/17	
SAMPLED.....	92/10/13	96/07/00		96/02/29	
FORMATION.....	CRET-CASTLEGATE	CRET-DAKOTA		CRET-NIOBRARA	
GEOLOGIC PROVINCE CODE...	595	595		540	
DEPTH, FEET.....	3640	7452		2590	
WELLHEAD PRESSURE, PSIG...	580	1550		460	
OPEN FLOW, MCFD.....	1316	460		966	
COMPONENT, MOLE PCT					
METHANE.....	85.2 -----	91.8 -----		93.5 -----	
ETHANE.....	7.1 -----	1.4 -----		0.8 -----	
PROPANE.....	3.8 -----	0.3 -----		0.1 -----	
N-BUTANE.....	0.7 -----	0.0 -----		0.0 -----	
ISOBUTANE.....	0.4 -----	0.1 -----		TRACE -----	
N-PENTANE.....	0.1 -----	0.0 -----		0.0 -----	
ISOPENTANE.....	0.3 -----	0.0 -----		0.0 -----	
CYCLOPENTANE.....	0.0 -----	0.0 -----		0.0 -----	
HEXANES PLUS.....	0.1 -----	0.0 -----		0.0 -----	
NITROGEN.....	1.4 -----	4.0 -----		4.4 -----	
OXYGEN.....	0.3 -----	0.7 -----		0.4 -----	
ARGON.....	TRACE -----	0.1 -----		0.1 -----	
HYDROGEN.....	TRACE -----	0.1 -----		TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	TRACE -----		0.0 -----	
CARBON DIOXIDE.....	0.7 -----	1.5 -----		0.6 -----	
HELIUM.....	0.02 -----	0.06 -----		0.09 -----	
HEATING VALUE*.....	1143 -----	964 -----		965 -----	
SPECIFIC GRAVITY.....	0.667	0.600		0.586	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 25		INDEX 26		INDEX 27	
SAMPLE 19381		SAMPLE 19961		SAMPLE 19939	
STATE.....	KANSAS	KANSAS		KANSAS	
COUNTY.....	BARBER	FINNEY		HASKELL	
FIELD.....	MOTT RANCH	HUGOTON		HUGOTON	
WELL NAME.....	MOTT A NO. 2	ESTHER NO. 2		GEORGE NO. 1-2	
API.....	15-007-22348	15-055-20354		15-081-20936	
LOCATION.....	SEC. 13, T31S, R12W	SEC. 6, T24S, R34W		SEC. 6, T27S, R32W	
OWNER.....	PICKRELL DRILLING CO., INC.	UNION PACIFIC RESOURCES CO.		HELMERICH & PAYNE, INC.	
COMPLETED.....	91/01/07	96/05/13		95/12/05	
SAMPLED.....	92/05/04	96/12/12		96/06/10	
FORMATION.....	PERNN-ELGIN	PERM-CHASE GROUP		PERM-CHASE GROUP	
GEOLOGIC PROVINCE CODE...	375	360		360	
DEPTH, FEET.....	3365	2488		2673	
WELLHEAD PRESSURE, PSIG...	1010	100		182	
OPEN FLOW, MCFD.....	3080	278		440	
COMPONENT, MOLE PCT					
METHANE.....	85.0	70.0		69.2	
ETHANE.....	3.5	6.0		5.1	
PROPANE.....	1.7	3.4		2.5	
N-BUTANE.....	0.3	0.6		0.5	
ISOBUTANE.....	0.2	0.5		0.3	
N-PENTANE.....	0.0	0.0		0.0	
ISOPENTANE.....	0.6	0.1		TRACE	
CYCLOPENTANE.....	0.0	0.0		0.0	
HEXANES PLUS.....	0.0	0.0		0.0	
NITROGEN.....	8.1	18.5		21.1	
OXYGEN.....	0.2	0.4		0.5	
ARGON.....	TRACE	0.1		0.1	
HYDROGEN.....	TRACE	TRACE		TRACE	
HYDROGEN SULFIDE**.....	0.0	0.0		0.0	
CARBON DIOXIDE.....	0.3	TRACE		0.1	
HELIUM.....	0.26	0.45		0.55	
HEATING VALUE*.....	1007	945		886	
SPECIFIC GRAVITY.....	0.643	0.714		0.706	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 28 SAMPLE 19951		INDEX 29 SAMPLE 19966		INDEX 30 SAMPLE 19920
STATE.....	KANSAS		KANSAS		KANSAS
COUNTY.....	HASKELL		HASKELL		KEARNY
FIELD.....	HUGOTON		VICTORY		HUGOTON
WELL NAME.....	JONES NO. 10-2		SIMPSON NO. 1-35		COLLINGWOOD NO. 1-B
API.....	15-081-20975		15-081-20918		15-093-21447
LOCATION.....	SEC. 10, T27S, R34W		SEC. 35, T30S, R33W		SEC. 13, T24S, R38W
OWNER.....	HELMERICH & PAYNE, INC.		HARRIS OIL & GAS CO.		OSBORN HEIRS CO.
COMPLETED.....	96/03/11		95/07/07		95/08/23
SAMPLED.....	96/07/26		97/01/04		96/03/18
FORMATION.....	PERM-CHASE GROUP		MISS-CHESTER		PERM-CHASE GROUP
GEOLOGIC PROVINCE CODE...	360		360		360
DEPTH, FEET.....	2706		5540		2608
WELLHEAD PRESSURE, PSIG...	93		150		194
OPEN FLOW, MCFD.....	711		NOT GIVEN		905
COMPONENT, MOLE PCT					
METHANE.....	73.9 -----		77.0 -----		67.2 -----
ETHANE.....	5.6 -----		6.4 -----		5.6 -----
PROPANE.....	2.2 -----		3.0 -----		2.8 -----
N-BUTANE.....	0.1 -----		0.3 -----		0.4 -----
ISOBUTANE.....	0.1 -----		0.4 -----		0.3 -----
N-PENTANE.....	0.0 -----		0.0 -----		0.0 -----
ISOPENTANE.....	0.1 -----		TRACE -----		TRACE -----
CYCLOPENTANE.....	0.0 -----		0.0 -----		0.0 -----
HEXANES PLUS.....	0.0 -----		0.0 -----		0.0 -----
NITROGEN.....	17.4 -----		11.6 -----		22.3 -----
OXYGEN.....	0.1 -----		0.7 -----		0.8 -----
ARGON.....	0.1 -----		0.1 -----		0.1 -----
HYDROGEN.....	TRACE -----		TRACE -----		TRACE -----
HYDROGEN SULFIDE**.....	0.0 -----		0.0 -----		0.0 -----
CARBON DIOXIDE.....	TRACE -----		0.1 -----		0.1 -----
HELIUM.....	0.46 -----		0.39 -----		0.53 -----
HEATING VALUE*.....	916 -----		997 -----		876 -----
SPECIFIC GRAVITY.....	0.680 -----		0.679 -----		0.716 -----

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 31 SAMPLE 19998		INDEX 32 SAMPLE 19373		INDEX 33 SAMPLE 19818	
STATE.....	KANSAS	KANSAS		KANSAS	
COUNTY.....	KEARNY	KIOWA		MEADE	
FIELD.....	HUGOTON	EINSEL		CIMARRON BEND NE	
WELL NAME.....	PILON NO. 1B	WARREN NO. 1		EASTERDAY NO. 2-29	
API.....	15-093-21565	15-097-21275		15-119-20898	
LOCATION.....	SEC. 15, T21S, R38W	SEC. 31, T27S, R18W		SEC. 29, T34S, R28W	
OWNER.....	OSBORN HEIRS CO.	TGT PETROLEUM CORP.		EAGLE CREEK CORP.	
COMPLETED.....	97/04/01	89/07/12		94/03/29	
SAMPLED.....	97/09/01	92/04/00		94/09/01	
FORMATION.....	PERM-CHASE GROUP	MISS---		PERM-COUNCIL GROVE	
GEOLOGIC PROVINCE CODE...	360	360		360	
DEPTH, FEET.....	2710	4794		3113	
WELLHEAD PRESSURE, PSIG...	133	NOT GIVEN		232	
OPEN FLOW, MCFD.....	200	5800		373	
COMPONENT, MOLE PCT					
METHANE.....	65.9 -----	91.3 -----		83.9 -----	
ETHANE.....	5.5 -----	3.4 -----		5.4 -----	
PROPANE.....	3.1 -----	1.4 -----		2.4 -----	
N-BUTANE.....	0.9 -----	0.2 -----		0.8 -----	
ISOBUTANE.....	0.3 -----	0.3 -----		0.2 -----	
N-PENTANE.....	0.2 -----	0.0 -----		0.4 -----	
ISOPENTANE.....	0.2 -----	0.6 -----		0.0 -----	
CYCLOPENTANE.....	0.0 -----	0.0 -----		0.1 -----	
HEXANES PLUS.....	0.2 -----	0.0 -----		0.2 -----	
NITROGEN.....	23.0 -----	2.4 -----		6.2 -----	
OXYGEN.....	0.1 -----	0.0 -----		TRACE -----	
ARGON.....	0.0 -----	TRACE -----		TRACE -----	
HYDROGEN.....	TRACE -----	TRACE -----		TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----		0.0 -----	
CARBON DIOXIDE.....	0.1 -----	TRACE -----		0.1 -----	
HELIUM.....	0.59 -----	0.40 -----		0.35 -----	
HEATING VALUE*.....	913 -----	1065 -----		1070 -----	
SPECIFIC GRAVITY.....	0.736 -----	0.614 -----		0.658 -----	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 34 SAMPLE 19794		INDEX 35 SAMPLE 19879		INDEX 36 SAMPLE 19925
STATE.....	KANSAS		KANSAS		KANSAS
COUNTY.....	MEADE		RUSH		SEWARD
FIELD.....	RAZORHAWK		WILDCAT		ADAMSON
WELL NAME.....	RANDALL 22 NO. 1		HERL TRUST NO. 1		WILES NO. 2
API.....	15-119-20882				15-175-21442
LOCATION.....	SEC. 22, T32S, R26W		SEC. 3, T16S, R18W		SEC. 3, T34S, R34W
OWNER.....	ENRON OIL & GAS CO.		NOBLE PETROLEUM CO.		KAISER-FRANCIS OIL CO.
COMPLETED.....	93/12/29		95/--/00		95/11/05
SAMPLED.....	94/06/17		95/09/00		96/03/29
FORMATION.....	MISS---		UNKN---		MISS-CHESTER
GEOLOGIC PROVINCE CODE...	360		385		360
DEPTH, FEET.....	5474		NOT GIVEN		6372
WELLHEAD PRESSURE, PSIG...	1428		NOT GIVEN		600
OPEN FLOW, MCFD.....	4238		NOT GIVEN		1500
COMPONENT, MOLE PCT					
METHANE.....	86.7	-----	36.7	-----	82.7
ETHANE.....	5.6	-----	3.4	-----	5.3
PROPANE.....	3.0	-----	1.4	-----	3.0
N-BUTANE.....	0.9	-----	0.3	-----	1.3
ISOBUTANE.....	0.4	-----	0.4	-----	0.5
N-PENTANE.....	0.3	-----	0.1	-----	0.7
ISOPENTANE.....	0.2	-----	0.2	-----	0.0
CYCLOPENTANE.....	0.1	-----	0.0	-----	0.1
HEXANES PLUS.....	0.2	-----	0.1	-----	0.4
NITROGEN.....	2.4	-----	52.9	-----	5.6
OXYGEN.....	0.0	-----	0.1	-----	TRACE
ARGON.....	TRACE	-----	0.2	-----	TRACE
HYDROGEN.....	TRACE	-----	TRACE	-----	TRACE
HYDROGEN SULFIDE**.....	0.0	-----	0.0	-----	0.0
CARBON DIOXIDE.....	0.1	-----	0.3	-----	0.3
HELIUM.....	0.13	-----	4.15	-----	0.14
HEATING VALUE*.....	1135	-----	505	-----	1125
SPECIFIC GRAVITY.....	0.658	-----	0.807	-----	0.688

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

		INDEX 37 SAMPLE 19875	INDEX 38 SAMPLE 19946	INDEX 39 SAMPLE 19717
STATE.....	KANSAS	KANSAS	KANSAS	
COUNTY.....	SEWARD	SEWARD	STANTON	
FIELD.....	ANGMAN	HUGOTON	ARROYO	
WELL NAME.....	SANTA FE NO. 1-F	COLLINGWOOD NO. M3	COCKREHAM NO. 10-1	
API.....	15-175-21432	15-175-21305	15-187-20686	
LOCATION.....	SEC. 31, T31S, R33W	SEC. 11, T31S, R32W	SEC. 10, T29S, R41W	
OWNER.....	ANADARKO PETROLEUM CORP.	TRXACO EXPL. & PROD, INC.	J.M. HUBER CORP.	
COMPLETED.....	94/12/21	95/10/27	93/12/14	
SAMPLED.....	95/06/15	96/07/29	94/02/05	
FORMATION.....	MISS-CHESTER	PERM-CHASE GROUP	PERM-MORROW	
GEOLOGIC PROVINCE CODE...	360	360	360	
DEPTH, FEET.....	5500	2686	5412	
WELLHEAD PRESSURE, PSIG...	1200	142	955	
OPEN FLOW, MCFD.....	2629	199	15001	
COMPONENT, MOLE PCT				
METHANE.....	87.8 -----	73.3 -----	75.7 -----	
ETHANE.....	4.8 -----	3.3 -----	3.5 -----	
PROPANE.....	2.3 -----	1.6 -----	2.2 -----	
N-BUTANE.....	0.8 -----	0.4 -----	0.8 -----	
ISOBUTANE.....	0.3 -----	0.2 -----	0.3 -----	
N-PENTANE.....	0.1 -----	0.0 -----	0.3 -----	
ISOPENTANE.....	0.3 -----	0.1 -----	0.1 -----	
CYCLOPENTANE.....	0.0 -----	0.0 -----	TRACE	
HEXANES PLUS.....	0.0 -----	0.0 -----	0.1 -----	
NITROGEN.....	3.0 -----	20.3 -----	14.8 -----	
OXYGEN.....	TRACE -----	TRACE -----	TRACE -----	
ARGON.....	TRACE -----	0.1 -----	0.1 -----	
HYDROGEN.....	TRACE -----	TRACE -----	TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----	0.0 -----	
CARBON DIOXIDE.....	0.2 -----	TRACE -----	0.3 -----	
HELIUM.....	0.30 -----	0.65 -----	1.75 -----	
HEATING VALUE*.....	1089 -----	870 -----	952 -----	
SPECIFIC GRAVITY.....	0.639	0.681	0.680	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 40 SAMPLE 19915		INDEX 41 SAMPLE 19960		INDEX 42 SAMPLE 19909	
STATE.....	KANSAS	KANSAS		KANSAS	
COUNTY.....	STANTON	STANTON		STEVENS	
FIELD.....	HUGOTON	UNNAMED		HUGOTON	
WELL NAME.....	SMITH C NO. 3HI	KAYLA MARIE NO. 1-2		WONDER NO. 2C	
API.....	15-187-20794	15-187-20834		15-189-21598	
LOCATION.....	SEC. 5, T27S, R39W	SEC. 2, T30S, R40W		SEC. 28, T34S, R35W	
OWNER.....	AMOCO PRODUCTION CO.	AMOCO PRODUCTION CO.		OXY USA, INC.	
COMPLETED.....	95/11/09	96/06/18		95/01/10	
SAMPLED.....	96/03/05	96/11/15		96/02/08	
FORMATION.....	PERM-CHASE GROUP	PENN-MORROW		PERM-CHASE GROUP	
GEOLOGIC PROVINCE CODE...	360	360		360	
DEPTH, FEET.....	2552	5100		2663	
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	738		115	
OPEN FLOW, MCFD.....	NOT GIVEN	1200		370	
COMPONENT, MOLE PCT					
METHANE.....	70.9	74.2		74.4	
ETHANE.....	6.8	5.4		5.0	
PROPANE.....	4.0	3.5		2.8	
N-BUTANE.....	1.1	0.3		0.8	
ISOBUTANE.....	0.4	0.4		0.5	
N-PENTANE.....	0.2	0.0		0.0	
ISOPENTANE.....	0.2	TRACE		0.0	
CYCLOPENTANE.....	0.0	0.0		0.1	
HEXANES PLUS.....	0.0	0.0		0.1	
NITROGEN.....	16.0	15.5		15.6	
OXYGEN.....	TRACE	0.3		0.1	
ARGON.....	TRACE	TRACE		TRACE	
HYDROGEN.....	TRACE	TRACE		TRACE	
HYDROGEN SULFIDE**.....	0.0	0.0		0.0	
CARBON DIOXIDE.....	0.1	0.1		0.2	
HELIUM.....	0.41	0.41		0.52	
HEATING VALUE*.....	1006	961		966	
SPECIFIC GRAVITY.....	0.722	0.691		0.694	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19702	INDEX SAMPLE 19716	INDEX SAMPLE 19907
STATE.....	LOUISIANA	LOUISIANA	LOUISIANA
PARISH.....	ACADIA	CLAIBORNE	UNION
FIELD.....	PERRY POINT	SHONGALOO N	MONROE
WELL NAME.....	H.J. NEELIS NO. 1	G.R. SANDERS HEIRS NO. 1	NLGC FEB GAS NO. 1645
API.....	17-001-21832	17-027-21678	17-111-25467
LOCATION.....	SEC. 39, T10S, R2E	SEC. 7, T23N, R8W	SEC 15, T20N, R3E
OWNER.....	PHILLIPS PETROLEUM CO.	MARATHON OIL CO.	MID-LOUISIANA GAS CO.
COMPLETED.....	93/--/00	93/09/00	95/06/30
SAMPLED.....	94/01/00	94/02/03	96/01/25
FORMATION.....	OLIG-BOLIVINA MEXICANA	JURA-SMACKOVER C	CRET-MONROE GAS ROCK
GEOLOGIC PROVINCE CODE...	220	230	230
DEPTH, FEET.....	15410	11730	2118
WELLHEAD PRESSURE, PSIG...	6151	2500	40
OPEN FLOW, MCFD.....	1124	2000	40
COMPONENT, MOLE PCT			
METHANE.....	94.5 -----	79.8 -----	92.0 -----
ETHANE.....	1.9 -----	9.4 -----	0.5 -----
PROPANE.....	0.3 -----	4.6 -----	0.1 -----
N-BUTANE.....	0.1 -----	1.8 -----	0.0 -----
ISOBUTANE.....	0.0 -----	1.3 -----	0.1 -----
N-PENTANE.....	0.1 -----	0.7 -----	0.0 -----
ISOPENTANE.....	0.0 -----	0.3 -----	0.0 -----
CYCLOPENTANE.....	TRACE	0.1 -----	0.0 -----
HEXANES PLUS.....	0.1 -----	0.4 -----	0.0 -----
NITROGEN.....	0.1 -----	0.6 -----	6.5 -----
OXYGEN.....	TRACE -----	TRACE -----	0.1 -----
ARGON.....	TRACE	0.0 -----	TRACE
HYDROGEN.....	TRACE -----	TRACE -----	0.1 -----
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----	0.0 -----
CARBON DIOXIDE.....	2.9 -----	1.1 -----	0.6 -----
HELIUM.....	TRACE	0.01 -----	0.09 -----
HEATING VALUE*.....	1013 -----	1264 -----	945 -----
SPECIFIC GRAVITY.....	0.602	0.737	0.592

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 46 SAMPLE 19701		INDEX 47 SAMPLE 19949		INDEX 48 SAMPLE 19465	
STATE.....	LOUISIANA	MISSISSIPPI		MISSISSIPPI	
PARISH.....	WEBSTER	AMITE		HINDS	
FIELD.....	ADA	BERWICK		UTICA	
WELL NAME.....	W. DAVIS NO. 1	S.J. BRADDOCK NO. 1		CALDWELL ESTATE 14-16 NO. 1	
API.....	17-119-21512	23-005-20636			
LOCATION.....	SEC. 3, T17N, R8W	SEC. 38, T2N, R3E		NOT GIVEN	
OWNER.....	PHILLIPS PETROLEUM CO.	FRIO EXPLORATION CO.		SMITH PRODUCTION CO.	
COMPLETED.....	93/09/22	96/02/17		91/--/00	
SAMPLED.....	93/12/29	96/08/06		92/10/00	
FORMATION.....	CRET-HOSSTON B	OLIG-FRIO		CRET-HOSSTON	
GEOLOGIC PROVINCE CODE...	230	210		210	
DEPTH, FEET.....	8413	3825		17400	
WELLHEAD PRESSURE, PSIG...	3779	1400		NOT GIVEN	
OPEN FLOW, MCFD.....	1850	200		4600	
COMPONENT, MOLE PCT					
METHANE.....	95.6	98.0		89.1	
ETHANE.....	1.6	0.0		0.2	
PROPANE.....	0.3	0.1		TRACE	
N-BUTANE.....	0.2	0.0		0.0	
ISOBUTANE.....	0.0	0.0		0.0	
N-PENTANE.....	0.2	0.0		0.0	
ISOPENTANE.....	0.0	0.0		0.0	
CYCLOPENTANE.....	TRACE	0.0		0.0	
HEXANES PLUS.....	0.2	0.0		0.0	
NITROGEN.....	0.8	1.6		3.0	
OXYGEN.....	0.1	0.3		0.2	
ARGON.....	TRACE	TRACE		TRACE	
HYDROGEN.....	TRACE	TRACE		TRACE	
HYDROGEN SULFIDE**.....	0.0	TRACE		0.0	
CARBON DIOXIDE.....	1.0	0.0		7.4	
HELIUM.....	0.02	0.01		0.03	
HEATING VALUE*	1028	995		907	
SPECIFIC GRAVITY.....	0.590	0.563		0.641	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19904	INDEX SAMPLE 19910	INDEX SAMPLE 19468
STATE.....	MISSISSIPPI	MONTANA	MONTANA
COUNTY.....	MONROE	LIBERTY	TOOLE
FIELD.....	MCKINLEY CREEK	KEITH B	AMANDA
WELL NAME.....	NEVINS 20-9 NO. 1	OSLER UNIT NO. 9-23	STATE NO. 25-4
API.....	23-095-20666	25-051-21692	25-101-23472
LOCATION.....	SEC. 20, T15S, R18W	SEC. 23, T36N, R6E	SEC. 25, T36N, R4W
OWNER.....	BROWNING & WELCH, INC.	MONTANA POWER CO.	SOMONT OIL CO.
COMPLETED.....	95/03/20	95/09/22	92/09/13
SAMPLED.....	96/01/31	96/02/14	92/10/28
FORMATION.....	PENN-PENNSYLVANIAN B	CRET-BOW ISLAND	CRET-DAKOTA
GEOLOGIC PROVINCE CODE...	200	500	500
DEPTH, FEET.....	1459	1883	2010
WELLHEAD PRESSURE, PSIG...	311	95	194
OPEN FLOW, MCFD.....	276	1350	1600
COMPONENT, MOLE PCT			
METHANE.....	97.9	92.5	89.4
ETHANE.....	0.4	0.3	0.8
PROPANE.....	0.1	0.1	0.1
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	0.0	TRACE	TRACE
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.0	0.1
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	1.0	5.6	8.8
OXYGEN.....	0.1	0.9	0.2
ARGON.....	TRACE	0.1	0.1
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.5	0.4	0.2
HELIUM.....	0.07	0.09	0.27
HEATING VALUE*.....	1001	946	926
SPECIFIC GRAVITY.....	0.566	0.589	0.600

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 52 SAMPLE 19805		INDEX 53 SAMPLE 19936		INDEX 54 SAMPLE 19820	
STATE.....	NEBRASKA	NEW MEXICO		NEW MEXICO	
COUNTY.....	CHEYENNE	EDDY		EDDY	
FIELD.....	MCCOURT	ATOKA W		CEDAR LAKE E	
WELL NAME.....	KRAFT NO. 13-1B	C.N. VANDIVER COM. NO. 2		DOW B 33 FEDERAL NO. 1	
API.....	26-033-22434	30-015-28355		30-015-27068	
LOCATION.....	SEC. 13, T16N, R48W	SEC. 18, T18S, R26E		SEC. 33, T17S, R31E	
OWNER.....	SNYDER OIL CORP.	YATES PETROLEUM CORP.		TEXACO EXPL. & PROD, INC.	
COMPLETED.....	93/01/10	95/11/19		93/--/00	
SAMPLED.....	94/07/14	96/05/06		94/09/00	
FORMATION.....	CRET-NIOBRARA	PENN-MORROW		PENN-MORROW	
GEOLOGIC PROVINCE CODE...	540	430		430	
DEPTH, FEET.....	3430	8794		11614	
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	NOT GIVEN		NOT GIVEN	
OPEN FLOW, MCFD.....	450	2150		1580	
COMPONENT, MOLE PCT					
METHANE.....	89.9 -----	90.3 -----		85.5 -----	
ETHANE.....	1.5 -----	4.6 -----		8.1 -----	
PROPANE.....	0.9 -----	1.3 -----		3.3 -----	
N-BUTANE.....	0.3 -----	0.2 -----		0.8 -----	
ISOBUTANE.....	0.1 -----	0.2 -----		0.3 -----	
N-PENTANE.....	0.1 -----	0.0 -----		0.2 -----	
ISOPENTANE.....	0.1 -----	TRACE -----		0.1 -----	
CYCLOPENTANE.....	TRACE -----	0.0 -----		0.1 -----	
HEXANES PLUS.....	0.1 -----	0.0 -----		0.2 -----	
NITROGEN.....	6.4 -----	2.2 -----		0.7 -----	
OXYGEN.....	0.1 -----	0.9 -----		0.1 -----	
ARGON.....	TRACE -----	TRACE -----		TRACE -----	
HYDROGEN.....	TRACE -----	TRACE -----		TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----		0.0 -----	
CARBON DIOXIDE.....	0.4 -----	0.3 -----		0.4 -----	
HELIUM.....	0.14 -----	0.02 -----		0.02 -----	
HEATING VALUE*.....	987 -----	1044 -----		1163 -----	
SPECIFIC GRAVITY.....	0.613	0.613		0.665	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 55 SAMPLE 19385	INDEX 56 SAMPLE 19829	INDEX 57 SAMPLE 19587
STATE.....	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY.....	EDDY	EDDY	EDDY
FIELD.....	DAGGER DRAW	DOS HERMANOS NE	INDIAN BASIN
WELL NAME.....	ALBERT "AJH" NO. 1	AMARANTH FED. AMG NO. 1	HICKORY FED. ALV NO. 1
API.....	30-015-26720	30-015-27375	30-015-10566
LOCATION.....	SEC. 21, T20S, R24E	SEC. 12, T20S, R30E	SEC. 17, T22S, R24E
OWNER.....	YATES PETROLEUM CORP.	YATES PETROLEUM CORP.	YATES PETROLEUM CORP.
COMPLETED.....	91/12/21	93/08/14	92/10/28
SAMPLED.....	92/05/28	94/10/06	93/04/26
FORMATION.....	PENN-NORROW	PENN-NORROW	PENN-CANYON
GEOLOGIC PROVINCE CODE...	430	430	430
DEPTH, FEET.....	8842	12468	9886
WELLHEAD PRESSURE, PSIG...	2875	600	2600
OPEN FLOW, MCFD.....	1650	1489	3801
COMPONENT, MOLE PCT			
METHANE.....	95.4 -----	85.5 -----	82.7 -----
ETHANE.....	2.3 -----	6.0 -----	9.0 -----
PROPANE.....	0.4 -----	2.7 -----	3.6 -----
N-BUTANE.....	0.0 -----	1.0 -----	1.2 -----
ISOBUTANE.....	0.1 -----	0.8 -----	0.4 -----
N-PENTANE.....	0.0 -----	1.0 -----	0.2 -----
ISOPENTANE.....	0.1 -----	0.0 -----	0.6 -----
CYCLOPENTANE.....	0.0 -----	0.4 -----	0.0 -----
HEXANES PLUS.....	0.0 -----	1.3 -----	0.0 -----
NITROGEN.....	1.0 -----	0.4 -----	1.2 -----
OXYGEN.....	0.2 -----	0.1 -----	0.3 -----
ARGON.....	0.0 -----	0.0 -----	TRACE
HYDROGEN.....	TRACE -----	TRACE -----	TRACE -----
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----	0.3 -----
CARBON DIOXIDE.....	0.6 -----	0.8 -----	0.5 -----
HELIUM.....	0.03 -----	0.02 -----	0.01 -----
HEATING VALUE*.....	1025 -----	1228 -----	1180 -----
SPECIFIC GRAVITY.....	0.583 -----	0.706 -----	0.687 -----

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 58 SAMPLE 19988		INDEX 59 SAMPLE 19971		INDEX 60 SAMPLE 19916
STATE.....	NEW MEXICO		NEW MEXICO		NEW MEXICO
COUNTY.....	EDDY		EDDY		LEA
FIELD.....	SAND TANK		WINCHESTER		BELL LAKE W
WELL NAME.....	SAND TANK 1 FED. COM. NO. 1		OXY 33 FEDERAL NO. 1		NORTH BELL LAKE FEDERAL NO.2
API.....	30-015-29221		30-015-28970		30-025-32672
LOCATION.....	SEC. 1, T18S, R29E		SEC. 33, T19S, R28E		SEC. 5, T23S, R34E
OWNER.....	ENRON OIL & GAS CO.		OXY USA, INC.		AMERADA HESS CORP.
COMPLETED.....	96/12/04		96/08/27		95/05/19
SAMPLED.....	97/06/17		97/02/11		96/03/08
FORMATION.....	PENN-MORROW		PERM-WOLFCAMP		ORDO-ELLENBURGER
GEOLOGIC PROVINCE CODE...	430		430		430
DEPTH, FEET.....	11286		9094		17290
WELLHEAD PRESSURE, PSIG...	2010		2800		7379
OPEN FLOW, MCFD.....	5200		1600		1000
COMPONENT, MOLE PCT					
METHANE.....	87.4 -----		80.2 -----		96.7 -----
ETHANE.....	7.8 -----		12.0 -----		0.6 -----
PROPANE.....	3.0 -----		4.6 -----		0.2 -----
N-BUTANE.....	0.3 -----		1.0 -----		0.0 -----
ISOBUTANE.....	0.4 -----		0.6 -----		0.1 -----
N-PENTANE.....	0.0 -----		0.3 -----		0.0 -----
ISOPENTANE.....	0.0 -----		TRACE -----		0.0 -----
CYCLOPENTANE.....	0.0 -----		TRACE -----		0.0 -----
HEXANES PLUS.....	0.0 -----		0.1 -----		0.0 -----
NITROGEN.....	0.7 -----		1.0 -----		1.4 -----
OXYGEN.....	0.0 -----		0.0 -----		0.3 -----
ARGON.....	0.0 -----		0.0 -----		TRACE -----
HYDROGEN.....	TRACE -----		TRACE -----		TRACE -----
HYDROGEN SULFIDE**.....	0.0 -----		0.0 -----		0.0 -----
CARBON DIOXIDE.....	0.4 -----		0.2 -----		0.7 -----
HELIUM.....	0.03 -----		0.02 -----		0.08 -----
HEATING VALUE*.....	1126 -----		1218 -----		997 -----
SPECIFIC GRAVITY.....	0.640		0.697		0.574

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 61 SAMPLE 19906		INDEX 62 SAMPLE 19819		INDEX 63 SAMPLE 19893	
STATE.....	NEW MEXICO	NEW MEXICO		NEW MEXICO	
COUNTY.....	LEA	LEA		LEA	
FIELD.....	KEMNITZ S	MONUMENT		RHODES	
WELL NAME.....	STATE OF NEW MEXICO NO. 1-35	L. VAN ETEN NO. 13		RHODES A NO. 4	
API.....	30-025-32907	30-025-32221		30-025-32967	
LOCATION.....	SEC 35, T16S, R34E	SEC. 9, T20S, R37E		SEC. 22, T26S, R37E	
OWNER.....	MEDALLION PRODUCTION CO.	TEXACO EXPL. & PROD, INC.		MERIDIAN OIL, INC.	
COMPLETED.....	95/08/14	93/12/29		95/06/08	
SAMPLED.....	96/01/27	94/09/00		95/12/08	
FORMATION.....	PENN-ATOKA	PERM-TUBB		PERM-YATES	
GEOLOGIC PROVINCE CODE...	430	430		430	
DEPTH, FEET.....	12466	6327		2936	
WELLHEAD PRESSURE, PSIG...	2154	500		749	
OPEN FLOW, MCFD.....	2260	1800		3581	
COMPONENT, MOLE PCT					
METHANE.....	87.2 -----	83.3 -----		86.1 -----	
ETHANE.....	6.9 -----	7.6 -----		6.8 -----	
PROPANE.....	2.3 -----	3.4 -----		3.3 -----	
N-BUTANE.....	0.3 -----	1.1 -----		0.8 -----	
ISOBUTANE.....	0.3 -----	0.3 -----		0.5 -----	
N-PENTANE.....	0.0 -----	0.4 -----		0.1 -----	
ISOPENTANE.....	0.1 -----	0.1 -----		0.2 -----	
CYCLOPENTANE.....	0.0 -----	0.1 -----		0.0 -----	
HEXANES PLUS.....	0.0 -----	0.2 -----		0.0 -----	
NITROGEN.....	2.0 -----	2.7 -----		2.0 -----	
OXYGEN.....	0.5 -----	0.0 -----		0.1 -----	
ARGON.....	TRACE	TRACE		TRACE	
HYDROGEN.....	TRACE -----	TRACE -----		TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----		0.0 -----	
CARBON DIOXIDE.....	0.4 -----	0.8 -----		0.1 -----	
HELIUM.....	0.04 -----	0.05 -----		0.02 -----	
HEATING VALUE*.....	1091 -----	1151 -----		1138 -----	
SPECIFIC GRAVITY.....	0.637	0.682		0.657	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 64 SAMPLE 19970		INDEX 65 SAMPLE 19836		INDEX 66 SAMPLE 19994
STATE.....	NEW MEXICO		NEW MEXICO		NEW MEXICO
COUNTY.....	LEA		RIO ARriba		SAN JUAN
FIELD.....	WANTZ		CHOZA MESA		HUERFAMO
WELL NAME.....	LOU WORTHAN NO. 21		VALDEZ NO. 5		A.D. HUDSON NO. 4
API.....	30-025-33426		30-039-25295		30-045-06238
LOCATION.....	SEC. 11, T22S, R37E		SEC. 16, T28N, R4W		SEC. 29, T27N, R9W
OWNER.....	MARATHON OIL CO.		MERIDIAN OIL, INC.		BURLINGTON RESOURCES
COMPLETED.....	96/08/26		93/11/03		97/01/17
SAMPLED.....	97/02/13		94/11/01		97/08/01
FORMATION.....	PERM-BLINEBRY		CRET-FRUITLAND COAL,PCT CLFS		CRET-FRUITLAND
GEOLOGIC PROVINCE CODE...	430		580		580
DEPTH, FEET.....	5654		4140		2097
WELLHEAD PRESSURE,PSIG...	300		1122		500
OPEN FLOW, MCFD.....	2400		446		1065
COMPONENT, MOLE PCT					
METHANE.....	82.7 -----		87.6 -----		86.1 -----
ETHANE.....	8.9 -----		6.9 -----		3.7 -----
PROPANE.....	4.0 -----		2.9 -----		1.6 -----
N-BUTANE.....	1.0 -----		0.8 -----		0.3 -----
ISOBUTANE.....	0.5 -----		0.4 -----		0.3 -----
N-PENTANE.....	0.2 -----		0.2 -----		0.1 -----
ISOPENTANE.....	0.1 -----		0.2 -----		0.2 -----
CYCLOPENTANE.....	TRACE		TRACE		0.0 -----
HEXANES PLUS.....	0.1 -----		0.1 -----		0.1 -----
NITROGEN.....	2.2 -----		0.7 -----		5.9 -----
OXYGEN.....	0.1 -----		TRACE		1.1 -----
ARGON.....	TRACE		TRACE		0.0 -----
HYDROGEN.....	TRACE		TRACE		TRACE
HYDROGEN SULFIDE**.....	0.0 -----		0.0 -----		0.0 -----
CARBON DIOXIDE.....	0.1 -----		0.2 -----		0.6 -----
HELIUM.....	0.03 -----		0.01 -----		0.04 -----
HEATING VALUE*.....	1170 -----		1150 -----		1020 -----
SPECIFIC GRAVITY.....	0.680		0.651		0.642

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 67 SAMPLE 19968		INDEX 68 SAMPLE 19903		INDEX 69 SAMPLE 19375	
STATE.....	NEW MEXICO	NORTH DAKOTA		OHIO	
COUNTY.....	SAN JUAN	WILLIAMS		HOLMES	
FIELD.....	UNNAMED	RAY		SOUTH CHARM W	
WELL NAME.....	RIDDLE B NO. 5	TEMPLE NO. 30-16		LYNN HOCSTETLER NO. 2	
API.....	30-045-20353	33-105-00900		34-075-24958	
LOCATION.....	SEC. 23, T30N, R10W	SBC 30, T157N, R96W		LOT 13, BERLIN TWP, BERLIN QUA	
OWNER.....	MERIDIAN OIL, INC.	W.H. HUNT TRUST ESTATE		MASON DRILLING, INC.	
COMPLETED.....	96/04/05	82/01/27		91/05/26	
SAMPLED.....	97/01/29	96/--/00		92/04/16	
FORMATION.....	CRET-GALLUP, DAKOTA	ORDO-RBD RIVER		ORDO-ROSB RUN	
GEOLOGIC PROVINCE CODE...	580	395		160	
DEPTH, FEET.....	6582	12941		6142	
WELLHEAD PRESSURE, PSIG...	1250	350		2250	
OPEN FLOW, MCFD.....	250	130		3000	
COMPONENT, MOLE PCT					
METHANE.....	94.5 -----	47.4 -----		91.9 -----	
ETHANE.....	2.2 -----	8.0 -----		4.5 -----	
PROPANE.....	0.5 -----	4.3 -----		1.6 -----	
N-BUTANE.....	0.0 -----	2.2 -----		0.3 -----	
ISOBUTANE.....	0.1 -----	1.3 -----		0.4 -----	
N-PENTANE.....	0.0 -----	0.7 -----		0.0 -----	
ISOPENTANE.....	0.0 -----	0.3 -----		0.4 -----	
CYCLOPENTANE.....	0.0 -----	TRACE		0.0 -----	
HEXANES PLUS.....	0.0 -----	0.2 -----		0.0 -----	
NITROGEN.....	1.0 -----	0.0 -----		0.8 -----	
OXYGEN.....	0.4 -----	0.0 -----		0.0 -----	
ARGON.....	TRACE	TRACE		TRACE	
HYDROGEN.....	TRACE -----	0.1 -----		TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	34.6 -----		0.0 -----	
CARBON DIOXIDE.....	1.3 -----	0.9 -----		0.1 -----	
HELIUM.....	0.02 -----	0.01 -----		0.05 -----	
HEATING VALUE*.....	1012 -----	1131 -----		1093 -----	
SPECIFIC GRAVITY.....	0.590	0.944		0.615	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 70 SAMPLE 19645		INDEX 71 SAMPLE 19972		INDEX 72 SAMPLE 19929	
STATE.....	OKLAHOMA	OKLAHOMA		OKLAHOMA	
COUNTY.....	BEAVER	BLAINE		CADDO	
FIELD.....	IVANHOE	WATONGA-CHICKASHA TREND		LAVERTY	
WELL NAME.....	YOUNG A NO. 2	BROOKS NO. 1-32		STATE NO. 1-13	
API.....	35-007-23927	35-011-22653		35-015-20836	
LOCATION.....	SEC. 1, T1N, R27ECM	SEC. 32, T17N, R10W		SEC. 13, T6N, R9W	
OWNER.....	PHILLIPS PETROLEUM CO.	LOUIS DREYFUS NATURAL GAS CORP		RICKS EXPLORATION, INC.	
COMPLETED.....	93/04/17	96/07/03		95/08/24	
SAMPLED.....	93/07/00	97/03/06		96/04/02	
FORMATION.....	PENN-MORROW L	MISS-MERAMEC		PENN-MORROW	
GEOLOGIC PROVINCE CODE...	360	360		360	
DEPTH, FEET.....	8154	9949		15940	
WELLHEAD PRESSURE, PSIG...	976	1250		1400	
OPEN FLOW, MCFD.....	2000	1880		650	
COMPONENT, MOLE PCT					
METHANE.....	88.6	76.2		95.7	
ETHANE.....	5.4	8.8		2.5	
PROPANE.....	2.6	4.5		0.5	
N-BUTANE.....	0.8	1.7		0.0	
ISOBUTANE.....	0.3	0.9		0.2	
N-PENTANE.....	0.2	0.7		0.0	
ISOPENTANE.....	0.2	0.2		0.0	
CYCLOPENTANE.....	0.1	0.1		0.0	
HEXANES PLUS.....	0.1	0.4		0.0	
NITROGEN.....	1.6	4.8		0.2	
OXYGEN.....	0.0	1.2		TRACE	
ARGON.....	TRACE	TRACE		0.0	
HYDROGEN.....	TRACE	TRACE		TRACE	
HYDROGEN SULFIDE**.....	0.0	0.0		0.0	
CARBON DIOXIDE.....	0.1	0.4		0.9	
HELIUM.....	0.07	0.02		0.03	
HEATING VALUE*.....	1122	1197		1033	
SPECIFIC GRAVITY.....	0.641	0.742		0.584	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

		INDEX 73	INDEX 74	INDEX 75
		SAMPLE 19548	SAMPLE 19512	SAMPLE 19420
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	CANADIAN	CUSTER	BELLIS	BISHOP S
FIELD.....	WATONGA-CHICKASHA TREND	MOOREWOOD W	GROSS NO. 1-21	
WELL NAME.....	BARRET NO. A-3	BARNARD NO. 2-7	35-045-21706	
API.....	35-017-23331	35-039-21419	35-045-21706	
LOCATION.....	SEC. 19, T11N, R9W	SEC. 7, T15N, R20W	SEC. 21, T17N, R24W	
OWNER.....	SONAT EXPLORATION CO.	KAISER-FRANCIS OIL CO.	ZINKE & TRUMBO, LTD.	
COMPLETED.....	92/11/05	91/12/06	92/03/02	
SAMPLED.....	93/03/11	93/01/27	92/07/14	
FORMATION.....	PENN-SPRINGER	PENN-SKINNER	PENN-TONKAWA	
GEOLOGIC PROVINCE CODE...	360	360	360	
DEPTH, FEET.....	11921	11135	8115	
WELLHEAD PRESSURE, PSIG...	2750	500	2045	
OPEN FLOW, MCPD.....	806	1700	7027	
COMPONENT, MOLE PCT				
METHANE.....	94.4 -----	82.1 -----	82.6 -----	
ETHANE.....	3.2 -----	9.7 -----	7.0 -----	
PROPANE.....	0.9 -----	4.3 -----	3.6 -----	
N-BUTANE.....	0.2 -----	1.2 -----	0.5 -----	
ISOBUTANE.....	0.1 -----	0.5 -----	0.2 -----	
N-PENTANE.....	0.0 -----	0.4 -----	0.0 -----	
ISOPENTANE.....	0.1 -----	0.1 -----	1.8 -----	
CYCLOPENTANE.....	0.0 -----	0.1 -----	0.0 -----	
HEXANES PLUS.....	0.1 -----	0.4 -----	0.0 -----	
NITROGEN.....	0.2 -----	0.3 -----	3.5 -----	
OXYGEN.....	0.0 -----	TRACE -----	0.4 -----	
ARGON.....	TRACE -----	0.0 -----	TRACE -----	
HYDROGEN.....	TRACE -----	TRACE -----	TRACE -----	
HYDROGEN SULFIDE**.....	TRACE -----	0.0 -----	0.0 -----	
CARBON DIOXIDE.....	0.8 -----	0.8 -----	0.4 -----	
HELIUM.....	0.02 -----	0.03 -----	0.12 -----	
HEATING VALUE*.....	1057 -----	1220 -----	1153 -----	
SPECIFIC GRAVITY.....	0.596	0.702	0.689	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 76 SAMPLE 19506		INDEX 77 SAMPLE 19918		INDEX 78 SAMPLE 19955
STATE.....	OKLAHOMA		OKLAHOMA		OKLAHOMA
COUNTY.....	GRADY		KINGFISHER		LATIMER
FIELD.....	WILDCAT		SOONER TREND		BUFFALO MOUNTAIN
WELL NAME.....	MCCONNELL NO. 1-3		MORROW NO. 1		GREEN BAY NO. 2-34
API.....	35-051-22260		35-073-24330		35-077-20874
LOCATION.....	SEC. 3, T8N, R5W		SEC. 15, T16N, R7W		SEC. 34, T4N, R20E
OWNER.....	ANDERMAN/SMITH OPERATING CO.		MARLIN OIL CORP.		WARD PETROLEUM CORP.
COMPLETED.....	91/12/25		95/07/12		96/01/28
SAMPLED.....	93/01/08		96/03/14		96/08/25
FORMATION.....	PENN-OSBORNE		ORDO-SIMPSON, CAMO-ARBUCKLE		PENN-ATOKA
GEOLOGIC PROVINCE CODE...	360		360		345
DEPTH, FEET.....	9655		9506		7964
WELLHEAD PRESSURE, PSIG...	2126		2978		NOT GIVEN
OPEN FLOW, MCFD.....	4055		2958		1550
COMPONENT, MOLE PCT					
METHANE.....	86.4	-----	85.5	-----	95.3
ETHANE.....	7.2	-----	5.5	-----	2.9
PROPANE.....	2.8	-----	3.1	-----	0.6
N-BUTANE.....	0.9	-----	1.2	-----	0.0
ISOBUTANE.....	0.2	-----	0.5	-----	0.1
N-PENTANE.....	0.4	-----	0.5	-----	0.0
ISOPENTANE.....	TRACE	-----	0.2	-----	0.0
CYCLOPENTANE.....	0.1	-----	0.1	-----	0.0
HEXANES PLUS.....	0.3	-----	0.2	-----	0.0
NITROGEN.....	1.3	-----	3.0	-----	0.6
OXYGEN.....	0.1	-----	TRACE	-----	0.2
ARGON.....	TRACE	-----	TRACE	-----	TRACE
HYDROGEN.....	TRACE	-----	TRACE	-----	TRACE
HYDROGEN SULFIDE**.....	0.0	-----	0.0	-----	0.0
CARBON DIOXIDE.....	0.4	-----	0.2	-----	0.3
HELIUM.....	0.04	-----	0.06	-----	0.03
HEATING VALUE*.....	1144	-----	1142	-----	1037
SPECIFIC GRAVITY.....	0.659	-----	0.671	-----	0.582

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 79 SAMPLE 19683	INDEX 80 SAMPLE 19588	INDEX 81 SAMPLE 19997
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	LOGAN	OKLAHOMA	OSAGE
FIELD.....	LAWRIE W	BRITTON	KAW S
WELL NAME.....	MORRISON NO. 1-11	COLLEGE PARK NO. 4	OSAGE/DAVIS 25-5-8 NO. 1C
API.....	35-083-23210	35-109-21853	35-113-41003
LOCATION.....	SEC. 11, T17N, R3W	SEC. 21, T13N, R3W	SEC. 8, T25N, R5E
OWNER.....	SPRING DRILLING CORP.	SHAWVER & SONS, INC.	CHEVRON USA PRODUCTION CO.
COMPLETED.....	93/05/25	93/12/00	97/02/01
SAMPLED.....	93/11/00	93/04/30	97/08/20
FORMATION.....	PENN-CARMICHAEL	ORDO-WILCOX	MISS-CHAT
GEOLOGIC PROVINCE CODE...	355	355	355
DEPTH, FEET.....	3299	6490	3285
WELLHEAD PRESSURE, PSIG...	1200	1000	1200
OPEN FLOW, MCFD.....	1200	3800	1000
COMPONENT, MOLE PCT			
METHANE.....	64.0 -----	83.9 -----	72.4 -----
ETHANE.....	5.1 -----	7.6 -----	8.2 -----
PROPANE.....	2.5 -----	3.0 -----	3.1 -----
N-BUTANE.....	0.6 -----	1.0 -----	0.8 -----
ISOBUTANE.....	0.1 -----	0.1 -----	0.3 -----
N-PENTANE.....	0.1 -----	0.4 -----	0.2 -----
ISOPENTANE.....	0.3 -----	TRACE -----	0.2 -----
CYCLOPENTANE.....	TRACE	0.1 -----	0.0 -----
HEXANES PLUS.....	0.0 -----	0.3 -----	0.2 -----
NITROGEN.....	21.8 -----	3.3 -----	13.8 -----
OXYGEN.....	5.0 -----	TRACE -----	TRACE -----
ARGON.....	0.2 -----	TRACE -----	0.0 -----
HYDROGEN.....	TRACE -----	TRACE -----	TRACE -----
HYDROGEN SULFIDE**.....	TRACE	0.0 -----	0.0 -----
CARBON DIOXIDE.....	0.1 -----	0.3 -----	0.5 -----
HELIUM.....	0.11 -----	0.06 -----	0.26 -----
HEATING VALUE*.....	846 -----	1137 -----	1027 -----
SPECIFIC GRAVITY.....	0.743	0.672	0.717

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 82 SAMPLE 19874		INDEX 83 SAMPLE 19325		INDEX 84 SAMPLE 19443	
STATE.....	OKLAHOMA	OKLAHOMA		PENNSYLVANIA	
COUNTY.....	STEPHENS	WASHITA		MERCER	
FIELD.....	KNOX	BLK CITY		COCHRANTON	
WELL NAME.....	FOX ALLIANCE NO. 1	DORIS NO. 1-6		FRANCIS E. O'BRIEN NO. 2	
API.....	35-137-25528	35-149-20636		37-085-21131	
LOCATION.....	SEC. 4, T2N, R5W	SEC. 6, T9N, R19W		SEC. C, FRENCH CREEK DIST.	
OWNER.....	CHEVRON USA PRODUCTION CO.	KAISER-FRANCIS OIL CO.		CABOT OIL & GAS CORP.	
COMPLETED.....	95/03/16	91/10/23		90/12/00	
SAMPLED.....	95/06/07	92/03/02		92/09/03	
FORMATION.....	ORDO-VI,DEV-HNTN,WDP,MIS-SYC	PENN-PRUE		SILU-MEDINA	
GEOLOGIC PROVINCE CODE...	350	360		160	
DEPTH, FEET.....	12970	10962		5100	
WELLHEAD PRESSURE, PSIG...	6490	2002		NOT GIVEN	
OPEN FLOW, MCFD.....	32000	5250		1301	
COMPONENT, MOLE PCT					
METHANE.....	87.7 -----	90.7 -----		86.5 -----	
ETHANE.....	6.9 -----	4.6 -----		3.7 -----	
PROPANE.....	2.3 -----	1.7 -----		1.3 -----	
N-BUTANE.....	0.8 -----	0.3 -----		0.2 -----	
ISOBUTANE.....	0.3 -----	0.3 -----		0.1 -----	
N-PENTANE.....	0.5 -----	0.0 -----		0.0 -----	
ISOPENTANE.....	0.0 -----	0.2 -----		0.4 -----	
CYCLOPENTANE.....	0.1 -----	0.0 -----		0.0 -----	
HEXANES PLUS.....	0.3 -----	0.0 -----		TRACE -----	
NITROGEN.....	0.5 -----	1.0 -----		6.3 -----	
OXYGEN.....	TRACE -----	0.5 -----		1.1 -----	
ARGON.....	0.0 -----	TRACE -----		0.1 -----	
HYDROGEN.....	TRACE -----	TRACE -----		TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----		0.0 -----	
CARBON DIOXIDE.....	0.7 -----	0.7 -----		0.1 -----	
HELIUM.....	0.02 -----	0.03 -----		0.09 -----	
HEATING VALUE*.....	1145 -----	1072 -----		1006 -----	
SPECIFIC GRAVITY.....	0.654 -----	0.619 -----		0.633 -----	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 85 SAMPLE 19475			INDEX 86 SAMPLE 19898			INDEX 87 SAMPLE 19976		
STATE.....	TEXAS		TEXAS			TEXAS		
COUNTY.....	CHAMBERS		CONCHO			CROCKETT		
FIELD.....	CEDAR BAYOU		SELDEN			DAVIDSON RANCH		
WELL NAME.....	W. J. MOREAU NO. 1		CANNING A NO. 1			MCNULTAN C NO. 6		
API.....			42-095-31642			42-105-37273		
LOCATION.....	CHRISTIAN SMITH SUR., A-22		SEC. 82, BLK 72, T&NO SUR, A-1			SEC. 3, BLK P, TCRR SUR, A-288		
OWNER.....	AMERADA HESS CORP.		LECLAIR OPERATING CO., INC.			UNION PACIFIC RESOURCES CO.		
COMPLETED.....	91/--/00		95/06/27			96/07/22		
SAMPLED.....	92/11/05		96/01/11			97/03/12		
FORMATION.....	BOCE-YEGUA AU		PENN-GOEN LIMB			PENN-PENNSYLVANIAN		
GEOLOGIC PROVINCE CODE...	220		410			430		
DEPTH, FEET.....	13014		3423			8280		
WELLHEAD PRESSURE, PSIG...	2800		820			1800		
OPEN FLOW, MCFD.....	500		5250			1096		
COMPONENT, MOLE PCT								
METHANE.....	89.0	-----	74.0	-----		86.6	-----	
ETHANE.....	4.8	-----	6.9	-----		8.0	-----	
PROPANE.....	2.1	-----	3.8	-----		2.4	-----	
N-BUTANE.....	0.3	-----	1.6	-----		0.4	-----	
ISOBUTANE.....	0.2	-----	0.6	-----		0.4	-----	
N-PENTANE.....	0.0	-----	0.2	-----		0.1	-----	
ISOPENTANE.....	0.4	-----	0.2	-----		0.2	-----	
CYCLOPENTANE.....	0.0	-----	0.0	-----		TRACE	-----	
HEXANES PLUS.....	0.1	-----	0.1	-----		TRACE	-----	
NITROGEN.....	1.3	-----	12.0	-----		0.6	-----	
OXYGEN.....	0.2	-----	0.1	-----		0.1	-----	
ARGON.....	TRACE	-----	TRACE	-----		TRACE	-----	
HYDROGEN.....	TRACE	-----	TRACE	-----		TRACE	-----	
HYDROGEN SULFIDE**.....	0.0	-----	0.0	-----		0.0	-----	
CARBON DIOXIDE.....	1.6	-----	0.2	-----		1.2	-----	
HELIUM.....	TRACE	-----	0.40	-----		0.04	-----	
HEATING VALUE*.....	1082	-----	1063	-----		1125	-----	
SPECIFIC GRAVITY.....	0.639		0.719			0.651		

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 88 SAMPLE 19977	INDEX 89 SAMPLE 19963	INDEX 90 SAMPLE 19914
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	CROCKETT	CROCKETT	CROCKETT
FIELD.....	DAVIDSON RANCH	HENDERSON	HOWARDS CREEK
WELL NAME.....	C.E. DAVIDSON III NO. 5	J.H. SCHEUBER B NO. 4	UNIVERSITY LANDS 30-30, #44
API.....	42-105-37366	42-105-37298	42-105-37030
LOCATION.....	SEC. 16, BLK KL, GC&SF SUR, A-	SEC. 32, BLK KL, TCRR SUR, A-5	SEC 30, BLK 30, UNIVERSITY LAN
OWNER.....	HARRISON INTERESTS, LTD	TEXACO EXPL. & PROD, INC.	HARRISON INTERESTS, LTD.
COMPLETED.....	96/10/17	96/08/14	95/11/03
SAMPLED.....	97/03/17	96/12/12	96/02/22
FORMATION.....	PENN-PENNSYLVANIAN	PENN-CANYON	PENN-CANYON
GEOLOGIC PROVINCE CODE...	430	430	430
DEPTH, FEET.....	7918	7918	6501
WELLHEAD PRESSURE, PSIG...	2588	2248	1511
OPEN FLOW, MCFD.....	21060	2527	2750
COMPONENT, MOLE PCT			
METHANE.....	85.3 -----	82.5 -----	77.0 -----
ETHANE.....	8.5 -----	10.3 -----	10.8 -----
PROPANE.....	2.7 -----	3.6 -----	6.9 -----
N-BUTANE.....	0.5 -----	0.7 -----	1.9 -----
ISOBUTANE.....	0.5 -----	0.5 -----	0.5 -----
N-PENTANE.....	0.1 -----	0.2 -----	0.3 -----
ISOPENTANE.....	0.1 -----	0.2 -----	0.1 -----
CYCLOPENTANE.....	TRACE	0.0	TRACE
HEXANES PLUS.....	TRACE -----	0.1 -----	0.1 -----
NITROGEN.....	1.1 -----	1.1 -----	2.0 -----
OXYGEN.....	0.1 -----	TRACE -----	TRACE -----
ARGON.....	TRACE	TRACE	TRACE
HYDROGEN.....	TRACE -----	TRACE -----	TRACE -----
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----	0.0 -----
CARBON DIOXIDE.....	1.1 -----	0.8 -----	0.4 -----
HELIUM.....	0.04 -----	0.04 -----	0.06 -----
HEATING VALUE*.....	1131 -----	1172 -----	1256 -----
SPECIFIC GRAVITY.....	0.659	0.680	0.735

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 91 SAMPLE 19908			INDEX 92 SAMPLE 19895			INDEX 93 SAMPLE 19958		
STATE.....	TEXAS		TEXAS			TEXAS		
COUNTY.....	CROCKETT		CROCKETT			CROCKETT		
FIELD.....	HUNT-BAGGETT		HUNT-BAGGETT W			LIVE OAK DRAW W		
WELL NAME.....	BAGGETT A NO. 4		SPGC B NO. 11			J.L. HENDERSON JR., A NO. 4		
API.....	42-105-36930		42-105-36951			42-105-37240		
LOCATION.....	SEC. 23, BLK F, GC&SF SUR, A-2		SEC. 5, BLK J, GC&F SUR, A-213			SEC. 1, BLK F, GC&SF SUR, A-32		
OWNER.....	SONAT EXPLORATION CO.		BNRON OIL & GAS CO.			PARKER & PARSLBY PETROLEUM CO.		
COMPLETED.....	95/07/05		95/07/28			96/08/31		
SAMPLED.....	96/02/07		95/12/18			96/09/12		
FORMATION.....	PENN-STRAWN		PENN-STRAWN			PENN-STRAWN		
GEOLOGIC PROVINCE CODE...	430		430			430		
DEPTH, FEET.....	8910		9096			8922		
WELLHEAD PRESSURE, PSIG...	800		2160			1355		
OPEN FLOW, MCFD.....	900		6000			733		
COMPONENT, MOLE PCT								
METHANE.....	94.8	-----	91.3	-----		90.2	-----	
ETHANE.....	1.6	-----	5.3	-----		5.7	-----	
PROPANE.....	0.2	-----	1.0	-----		1.0	-----	
N-BUTANE.....	0.0	-----	0.1	-----		0.0	-----	
ISOBUTANE.....	TRACE	-----	0.2	-----		0.1	-----	
N-PENTANE.....	0.0	-----	0.0	-----		0.0	-----	
ISOPENTANE.....	TRACE	-----	0.1	-----		0.0	-----	
CYCLOPENTANE.....	0.0	-----	0.0	-----		0.0	-----	
HEXANES PLUS.....	0.0	-----	0.0	-----		0.0	-----	
NITROGEN.....	1.1	-----	0.7	-----		1.9	-----	
OXYGEN.....	0.3	-----	TRACE	-----		0.6	-----	
ARGON.....	TRACE	-----	TRACE	-----		TRACE	-----	
HYDROGEN.....	TRACE	-----	0.0	-----		TRACE	-----	
HYDROGEN SULFIDE**.....	0.0	-----	0.0	-----		0.0	-----	
CARBON DIOXIDE.....	2.0	-----	1.2	-----		0.4	-----	
HELIUM.....	0.04	-----	0.04	-----		0.04	-----	
HEATING VALUE*.....	993	-----	1061	-----		1046	-----	
SPECIFIC GRAVITY.....	0.590		0.612			0.610		

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 94 SAMPLE 19959		INDEX 95 SAMPLE 19636		INDEX 96 SAMPLE 19956	
STATE.....	TEXAS	TEXAS		TEXAS	
COUNTY.....	CROCKETT	CROCKETT		CROCKETT	
FIELD.....	MITCHELL RANCH	NOT GIVEN		READ RANCH	
WELL NAME.....	MITCHELL NO. 22	JAMES T. PADGITT NO. 3		READ NO. 1-1	
API.....	42-105-37117	42-105-34761		42-105-34793	
LOCATION.....	SEC. 1, BLK Q6, TCRR SUR, A-35	SEC. 17, BLK. AZ, S. C. WHITE		SEC. 1, TCRR SUR, A-3459	
OWNER.....	SHELL WESTERN E&P, INC.	PANADA EXPLORATION, INC.		IP PETROLEUM CO., INC.	
COMPLETED.....	96/04/12	91/11/26		96/01/25	
SAMPLED.....	96/09/07	93/01/15		96/08/20	
FORMATION.....	PENN-CANYON	ORDO-SIMPSON		PENN-STRAWN	
GEOLOGIC PROVINCE CODE...	430	430		430	
DEPTH, FEET.....	4560	6500		9122	
WELLHEAD PRESSURE, PSIG...	1163	1200		2773	
OPEN FLOW, MCPD.....	4800	1500		13278	
COMPONENT, MOLE PCT					
METHANE.....	81.2	85.3		93.2	
ETHANE.....	4.8	5.9		3.9	
PROPANE.....	2.9	2.1		0.4	
N-BUTANE.....	0.7	0.7		0.0	
ISOBUTANE.....	0.3	0.0		TRACE	
N-PENTANE.....	0.1	0.2		0.0	
ISOPENTANE.....	0.3	0.3		TRACE	
CYCLOPENTANE.....	0.0	0.0		0.0	
HEXANES PLUS.....	0.1	0.0		0.0	
NITROGEN.....	7.5	3.5		1.4	
OXYGEN.....	1.4	0.3		0.4	
ARGON.....	0.1	TRACE		TRACE	
HYDROGEN.....	TRACE	TRACE		TRACE	
HYDROGEN SULFIDE**.....	0.0	0.1		0.0	
CARBON DIOXIDE.....	0.6	1.5		0.5	
HELIUM.....	0.05	0.05		0.03	
HEATING VALUE*.....	1034	1070		1025	
SPECIFIC GRAVITY.....	0.675	0.657		0.592	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 97 SAMPLE 50568	INDEX 98 SAMPLE 19446	INDEX 99 SAMPLE 19896
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	DALLAS	DUVAL	ECTOR
FIELD.....	UNNAMED	BL ORO	PERNWELL
WELL NAME.....	CALLEJO NO. 1	GLASSCOCK NO. 1	ECTOR BF FEB NO. 2
API.....	42-113-30100		42-135-37022
LOCATION.....	JOHN B. HOLLAND SUR., A-614	SAN FRANCISCO SUR., A-216	SEC. 5, BLK 44, T3S, T&P SUR,
OWNER.....	AFB OIL AND GAS CONSULTANTS	ENERGY DEVELOPMENT CORP.	TEXACO, U.S.A.
COMPLETED.....	97/04/14	91/--/00	95/04/08
SAMPLED.....	97/04/14	92/09/21	95/09/28
FORMATION.....	MISS-BARNETT	BOCE-YEGUA	PERM-QUEEN
GEOLOGIC PROVINCE CODE...	400	220	430
DEPTH, FEET.....	8490	8865	3528
WELLHEAD PRESSURE, PSIG...	2909	1000	600
OPEN FLOW, MCFD.....	1970	1019	1800
COMPONENT, MOLE PCT			
METHANE.....	95.6 -----	90.7 -----	82.8 -----
ETHANE.....	0.8 -----	4.3 -----	8.2 -----
PROPANE.....	TRACE -----	1.9 -----	3.5 -----
N-BUTANE.....	0.0 -----	0.6 -----	0.9 -----
ISOBUTANE.....	0.0 -----	0.1 -----	0.9 -----
N-PENTANE.....	0.0 -----	0.2 -----	0.0 -----
ISOPENTANE.....	0.0 -----	0.2 -----	0.1 -----
CYCLOPENTANE.....	--- -----	0.1 -----	0.0 -----
HEXANES PLUS.....	0.1 -----	0.1 -----	0.2 -----
NITROGEN.....	1.1 -----	0.2 -----	3.4 -----
OXYGEN.....	0.0 -----	TRACE -----	TRACE -----
ARGON.....	--- -----	TRACE -----	TRACE -----
HYDROGEN.....	--- -----	TRACE -----	0.0 -----
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----	0.0 -----
CARBON DIOXIDE.....	2.5 -----	1.7 -----	TRACE -----
HELIUM.....	--- -----	TRACE -----	0.06 -----
HEATING VALUE*.....	986 -----	1092 -----	1148 -----
SPECIFIC GRAVITY.....	0.588	0.634	0.677

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 100 SAMPLE 19942		INDEX 101 SAMPLE 19714		INDEX 102 SAMPLE 19654
STATE.....	TEXAS		TEXAS		TEXAS
COUNTY.....	EDWARDS		GOLIAD		HANSFORD
FIELD.....	SNAKEBITE		SARCO CREEK		COLDWATER CREEK
WELL NAME.....	FOUR SQUARE RANCH NO. 72		CARRIE G. WOOD NO. 36		BORT NO. 1
API.....	42-137-31221		42-175-32729		42-195-31170
LOCATION.....	SEC. 7, BLK K, TCRS SUR, A-128		BLK. 23, GEORGE S. VILLA SUR.,		SEC. 279, BLK. 2, GH&G SUR.
OWNER.....	MERIDIAN OIL, INC.		EXPORT PETROLEUM CORP.		STRAT LAND EXPLORATION CO.
COMPLETED.....	96/01/03		93/09/24		93/06/12
SAMPLED.....	96/06/28		94/01/27		93/07/28
FORMATION.....	ORDO-BLENBURGER		OLIG-VICKSBURG		PENN-TONKAWA
GEOLOGIC PROVINCE CODE...	430		220		360
DEPTH, FEET.....	10303		5016		5292
WELLHEAD PRESSURE, PSIG...	1659		1719		1240
OPEN FLOW, MCFD.....	1400		9255		1000
COMPONENT, MOLE PCT					
METHANE.....	78.6 -----		96.1 -----		73.6 -----
ETHANE.....	1.7 -----		3.1 -----		4.3 -----
PROPANE.....	0.4 -----		0.2 -----		4.1 -----
N-BUTANE.....	0.1 -----		0.0 -----		1.4 -----
ISOBUTANE.....	TRACE -----		0.1 -----		0.2 -----
N-PENTANE.....	0.0 -----		0.0 -----		0.3 -----
ISOPENTANE.....	0.0 -----		0.0 -----		0.1 -----
CYCLOPENTANE.....	0.0 -----		0.0 -----		0.1 -----
HEXANES PLUS.....	0.0 -----		0.1 -----		0.1 -----
NITROGEN.....	6.5 -----		0.3 -----		15.0 -----
OXYGEN.....	0.8 -----		TRACE -----		0.2 -----
ARGON.....	0.1 -----		TRACE -----		TRACE -----
HYDROGEN.....	TRACE -----		TRACE -----		TRACE -----
HYDROGEN SULFIDE**.....	0.0 -----		0.0 -----		0.0 -----
CARBON DIOXIDE.....	11.7 -----		0.1 -----		0.1 -----
HELIUM.....	0.20 -----		0.01 -----		0.41 -----
HEATING VALUE*.....	840 -----		1039 -----		1012 -----
SPECIFIC GRAVITY.....	0.713 -----		0.577 -----		0.717 -----

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 103 SAMPLE 19839		INDEX 104 SAMPLE 19525		INDEX 105 SAMPLE 19547	
STATE.....	TEXAS	TEXAS		TEXAS	
COUNTY.....	HANSFORD	HEMPHILL		HEMPHILL	
FIELD.....	HANSFORD	FELDMAN		WATERFIELD	
WELL NAME.....	ARCHER TRUST NO. 1	RUTH CABE NO. 1		WATERFIELD NO. 16-1	
API.....	42-195-31179	42-211-31078		42-211-31565	
LOCATION.....	SEC. 151, BLK. 47, T&NO SUR.	SEC. 51, BLK. 42, H&TC SUR.		SEC. 16, BLK A-1, H&GM SUR	
OWNER.....	VENUS OIL CO.	BROCK OIL & GAS CORP.		SONAT EXPLORATION CO.	
COMPLETED.....	94/01/07	79/08/26		91/--/00	
SAMPLED.....	94/11/11	93/02/10		93/03/25	
FORMATION.....	PENN-MORROW L	PENN-MORROW L, A&B		PENN-MORROW	
GEOLOGIC PROVINCE CODE...	360	360		360	
DEPTH, FEET.....	7634	NOT GIVEN		NOT GIVEN	
WELLHEAD PRESSURE, PSIG...	428	5180		3100	
OPEN FLOW, MCFD.....	470	3200		NOT GIVEN	
COMPONENT, MOLE PCT					
METHANE.....	95.1	96.1		97.0	
ETHANE.....	2.4	0.8		0.8	
PROPANE.....	0.8	0.2		0.1	
N-BUTANE.....	0.2	0.0		0.0	
ISOBUTANE.....	TRACE	0.1		TRACE	
N-PENTANE.....	0.2	0.0		0.0	
ISOPENTANE.....	0.0	0.1		0.1	
CYCLOPENTANE.....	0.1	0.0		0.0	
HEXANES PLUS.....	0.2	0.0		0.0	
NITROGEN.....	0.6	0.4		0.2	
OXYGEN.....	0.1	0.1		TRACE	
ARGON.....	TRACE	TRACE		0.0	
HYDROGEN.....	TRACE	TRACE		TRACE	
HYDROGEN SULFIDE**.....	0.0	0.0		0.0	
CARBON DIOXIDE.....	0.3	2.2		1.8	
HELIUM.....	0.08	0.03		0.02	
HEATING VALUE*.....	1054	998		1004	
SPECIFIC GRAVITY.....	0.592	0.587		0.579	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 106 SAMPLE 19527	INDEX 107 SAMPLE 19724	INDEX 108 SAMPLE 19865
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	JACKSON	JACKSON	JASPER
FIELD.....	EL TORITO	STANFORD	MACK LAKE
WELL NAME.....	ANDERS NO. 1	HACKBARTH GAS UNIT NO. 1	DEER CREEK NO. 1
API.....	42-239-42541	42-239-32719	42-241-30552
LOCATION.....	WASHINGTON BEATY SUR.	PATRICK SCOTT SUR., A-69	TEXAS TRAN & LUMBER SUR., A-81
OWNER.....	SCANA PETROLEUM RESOURCES, INC	MURPHY H. BAXTER	LAKE RONEL OIL CO.
COMPLETED.....	90/06/23	93/09/24	93/10/08
SAMPLED.....	93/02/16	94/02/18	95/04/21
FORMATION.....	BOCE-YEGUA	OLIG-FRIO	OLIG-FRIO
GEOLOGIC PROVINCE CODE...	220	220	220
DEPTH, FEET.....	8958	6485	3755
WELLHEAD PRESSURE, PSIG...	5693	2261	1410
OPEN FLOW, MCFD.....	6260	7000	4420
COMPONENT, MOLE PCT			
METHANE.....	74.2	94.0	96.2
ETHANE.....	10.0	3.2	0.1
PROPANE.....	8.9	1.4	0.1
N-BUTANE.....	1.6	0.4	0.0
ISOBUTANE.....	2.6	0.2	TRACE
N-PENTANE.....	0.2	0.2	0.0
ISOPENTANE.....	0.2	0.1	TRACE
CYCLOPENTANE.....	0.0	0.1	0.0
HEXANES PLUS.....	0.1	0.1	0.0
NITROGEN.....	0.6	0.2	2.6
OXYGEN.....	0.3	TRACE	0.6
ARGON.....	TRACE	TRACE	TRACE
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.4	0.2	0.4
HELIUM.....	TRACE	TRACE	0.01
HEATING VALUE*.....	1326	1083	979
SPECIFIC GRAVITY.....	0.785	0.605	0.575

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 109 SAMPLE 19740		INDEX 110 SAMPLE 19444		INDEX 111 SAMPLE 19728	
STATE.....	TEXAS	TEXAS		TEXAS	
COUNTY.....	LIPSCOMB	LIVE OAK		NOLAN	
FIELD.....	MAGOUN S	TOM LYNE B		BLOODWORTH NB	
WELL NAME.....	HBIL NO. 1	GARZA NO. 1		BLOODWORTH UNIT NO. 3-7X	
API.....	42-295-32135			42-353-32208	
LOCATION.....	SEC. 971, BLK. 43, H&TC SUR.	S. M. WILLIAMS SUR. 113, A-553		SEC. 221, BLK. 1-A, H&TC SUR.	
OWNER.....	STRAT LAND EXPLORATION CO.	POGO PRODUCING CO.		JVA OPERATING CO., INC	
COMPLETED.....	93/12/12	92/--/00		93/10/14	
SAMPLED.....	94/03/22	92/09/09		94/03/02	
FORMATION.....	PENN-MORROW L	BOCK-WILCOX		PENN-CANYON	
GEOLOGIC PROVINCE CODE...	360	220		430	
DEPTH, FEET.....	9250	11267		5650	
WELLHEAD PRESSURE, PSIG...	1850	NOT GIVEN		1103	
OPEN FLOW, MCFD.....	10000	100		1388	
COMPONENT, MOLE PCT					
METHANE.....	93.6	88.7		20.8	
ETHANE.....	3.3	3.5		21.5	
PROPANE.....	1.0	0.7		31.6	
N-BUTANE.....	0.3	0.1		12.2	
ISOBUTANE.....	0.1	0.1		4.8	
N-PENTANE.....	0.1	0.0		3.2	
ISOPENTANE.....	TRACE	0.3		2.2	
CYCLOPENTANE.....	TRACE	0.0		0.6	
HEXANES PLUS.....	0.1	0.0		1.8	
NITROGEN.....	0.3	1.9		1.3	
OXYGEN.....	TRACE	0.9		0.1	
ARGON.....	TRACE	0.1		0.0	
HYDROGEN.....	TRACE	TRACE		TRACE	
HYDROGEN SULFIDE**.....	0.0	0.0		0.0	
CARBON DIOXIDE.....	1.0	3.6		0.0	
HELIUM.....	0.04	TRACE		TRACE	
HEATING VALUE*.....	1058	1001		2334	
SPECIFIC GRAVITY.....	0.603	0.637		1.401	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 112 SAMPLE 19835		INDEX 113 SAMPLE 19646		INDEX 114 SAMPLE 19933	
STATE.....	TEXAS	TEXAS		TEXAS	
COUNTY.....	NUECES	OCHILTREE		PALO PINTO	
FIELD.....	BRAYTON N	ELLIS RANCH		BIRDSONG	
WELL NAME.....	VON BLUCHER NO. 7	LINA C NO. 1R		STUART ESTATE 61 NO. 10	
API.....	42-355-32912	42-421-30539		42-363-34489	
LOCATION.....	P. J. ANTHONY SUR. 270, A-58	SBC. 570, BLK. 43, H&TC SUR.		SBC. 61, BLK 4, T&P SUR, A-823	
OWNER.....	PENNZOIL EXP. & PROD. CO.	PHILLIPS PETROLEUM CO.		THE CUMMING CO.	
COMPLETED.....	93/10/26	93/03/09		95/12/02	
SAMPLED.....	94/10/24	93/07/00		96/04/09	
FORMATION.....	OLIG-VICKSBURG	DEVO-HUNTON, MISS-KINDERHOOK		PENN-LAKE	
GEOLOGIC PROVINCE CODE...	220	360		425	
DEPTH, FEET.....	11817	11082		3811	
WELLHEAD PRESSURE, PSIG...	2400	3225		750	
OPEN FLOW, MCFD.....	3410	1850		1000	
COMPONENT, MOLE PCT					
METHANE.....	85.1 -----	90.1 -----		80.0 -----	
ETHANE.....	7.3 -----	4.8 -----		8.5 -----	
PROPANE.....	3.7 -----	1.7 -----		3.0 -----	
N-BUTANE.....	0.9 -----	0.5 -----		0.3 -----	
ISOBUTANE.....	0.7 -----	0.2 -----		0.3 -----	
N-PENTANE.....	0.2 -----	0.1 -----		0.0 -----	
ISOPENTANE.....	0.2 -----	0.1 -----		0.0 -----	
CYCLOPENTANE.....	TRACE	TRACE		0.0 -----	
HEXANES PLUS.....	0.1 -----	TRACE		0.0 -----	
NITROGEN.....	0.2 -----	2.0 -----		6.2 -----	
OXYGEN.....	TRACE -----	0.2 -----		1.4 -----	
ARGON.....	TRACE	TRACE		0.1 -----	
HYDROGEN.....	0.0 -----	0.2 -----		TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----		0.0 -----	
CARBON DIOXIDE.....	1.7 -----	0.1 -----		0.2 -----	
HELIUM.....	TRACE	0.08 -----		0.12 -----	
HEATING VALUE*.....	1166 -----	1076 -----		1059 -----	
SPECIFIC GRAVITY.....	0.679	0.619		0.670	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 115 SAMPLE 19993			INDEX 116 SAMPLE 19919			INDEX 117 SAMPLE 19890		
STATE.....	TEXAS		TEXAS			TEXAS		
COUNTY.....	PECOS		PECOS			PECOS		
FIELD.....	BOB-ROB		GLOSSOP			GOMEZ NW		
WELL NAME.....	NUTT 102 A NO. 2		MCDONALD NO. 2			W.C. TYRELL TRUST NO. 2		
API.....	42-371-36669		42-371-36561			42-371-36519		
LOCATION.....	SEC. 102, BLK 215, J. POITEVEN		SEC. 53, BLK 11, H&GN SUR, A-5			SEC 4, BLK. 115, GC&SF SUR.		
OWNER.....	ROBERT L. GLOSSOP		ROBERT L. GLOSSOP			TEXACO EXPL. & PROD, INC.		
COMPLETED.....	97/03/18		95/12/13			95/06/21		
SAMPLED.....	97/07/31		96/03/12			95/11/14		
FORMATION.....	PERM-WOLFCAMP U		PERM-WICHITA-ALBANY			PERM-WOLFCAMP		
GEOLOGIC PROVINCE CODE...	430		430			430		
DEPTH, FEET.....	6319		4079			10998		
WELLHEAD PRESSURE, PSIG...	2358		1820			5900		
OPEN FLOW, MCFD.....	7947		6066			3021		
COMPONENT, MOLE PCT								
METHANE.....	89.9	-----	92.2	-----		86.6	-----	
ETHANE.....	4.7	-----	3.4	-----		6.6	-----	
PROPANE.....	2.1	-----	1.2	-----		3.5	-----	
N-BUTANE.....	0.4	-----	0.3	-----		0.9	-----	
ISOBUTANE.....	0.4	-----	0.2	-----		0.5	-----	
N-PENTANE.....	0.0	-----	0.0	-----		0.3	-----	
ISOPENTANE.....	0.1	-----	0.1	-----		0.2	-----	
CYCLOPENTANE.....	0.0	-----	0.0	-----		0.0	-----	
HEXANES PLUS.....	0.0	-----	0.0	-----		0.1	-----	
NITROGEN.....	1.7	-----	2.1	-----		1.0	-----	
OXYGEN.....	0.0	-----	0.4	-----		TRACE	-----	
ARGON.....	TRACE	-----	TRACE	-----		TRACE	-----	
HYDROGEN.....	TRACE	-----	TRACE	-----		TRACE	-----	
HYDROGEN SULFIDE**.....	0.0	-----	0.0	-----		0.0	-----	
CARBON DIOXIDE.....	0.8	-----	0.1	-----		0.3	-----	
HELIUM.....	0.06	-----	0.06	-----		0.02	-----	
HEATING VALUE*.....	1078	-----	1043	-----		1160	-----	
SPECIFIC GRAVITY.....	0.625		0.603			0.663		

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

		INDEX 118 SAMPLE 19927	INDEX 119 SAMPLE 19981	INDEX 120 SAMPLE 19945
STATE.....	TEXAS	TEXAS	TEXAS	
COUNTY.....	PECOS	POTTER	REAGAN	
FIELD.....	WENTZ	BIVINS RANCH	GRIERSON SPRING	
WELL NAME.....	L.H. MILLAR NO. 22	BIVINS NO. 1-212	GRIERSON A NO. 2	
API.....	42-371-36500		42-383-34515	
LOCATION.....	SEC. 43, BLK 11, H&GN SUR, A-5	SEC. 212, BLK 2, AB&M SUR	SEC. 1, GTRR SUR, A-160	
OWNER.....	CHEVRON USA PRODUCTION CO.	J.W. RESOURCES	ENRON OIL & GAS CO.	
COMPLETED.....	95/01/13	88/10/17	96/02/13	
SAMPLED.....	96/04/03	97/05/02	96/07/10	
FORMATION.....	PERM-WICHITA-ALBANY	PERM-BROWN DOLOMITE	PENN-STRAWN	
GEOLOGIC PROVINCE CODE...	430	440	430	
DEPTH, FEET.....	4067	3428	8855	
WELLHEAD PRESSURE, PSIG...	900	680	1600	
OPEN FLOW, MCFD.....	111	160	3502	
COMPONENT, MOLE PCT				
METHANE.....	91.5 -----	64.3 -----	74.3 -----	
ETHANE.....	3.6 -----	3.5 -----	13.6 -----	
PROPANE.....	1.4 -----	1.4 -----	5.9 -----	
N-BUTANE.....	0.3 -----	0.4 -----	1.3 -----	
ISOBUTANE.....	0.2 -----	0.2 -----	0.5 -----	
N-PENTANE.....	0.0 -----	0.1 -----	0.3 -----	
ISOPENTANE.....	TRACE -----	0.1 -----	0.2 -----	
CYCLOPENTANE.....	0.0 -----	0.0 -----	TRACE -----	
HEXANES PLUS.....	0.0 -----	0.1 -----	0.1 -----	
NITROGEN.....	2.3 -----	24.6 -----	3.4 -----	
OXYGEN.....	0.5 -----	0.0 -----	TRACE -----	
ARGON.....	TRACE -----	0.2 -----	TRACE -----	
HYDROGEN.....	TRACE -----	TRACE -----	TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----	0.0 -----	
CARBON DIOXIDE.....	0.1 -----	3.8 -----	0.3 -----	
HELIUM.....	0.06 -----	1.57 -----	0.07 -----	
HEATING VALUE*.....	1048 -----	783 -----	1238 -----	
SPECIFIC GRAVITY.....	0.608 -----	0.734 -----	0.737 -----	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 121 SAMPLE 19864		INDEX 122 SAMPLE 19899		INDEX 123 SAMPLE 19979	
STATE.....	TEXAS	TEXAS		TEXAS	
COUNTY.....	REFUGIO	ROBERTS		ROBERTS	
FIELD.....	LA ROSA	CARRIE KILLIBREW		RED DEER CREEK	
WELL NAME.....	LA ROSA UNIT NO. 26	MORRISON NO. 3-212		BYRON NO. 3-6	
API.....	42-391-03411	42-393-31270		42-393-31333	
LOCATION.....	JOSE MARIA ALDRETE SUR., A-1	SEC. 212, BLK 42, H&TC SUR		SEC. 6, BLK B-1, H&GN SUR, A-9	
OWNER.....	LAROCO L L P	MIDGARD ENERGY CO.		PARKER & PARSLBY PETROLEUM CO.	
COMPLETED.....	94/09/28	95/08/07		96/12/03	
SAMPLED.....	95/04/13	96/01/10		97/04/15	
FORMATION.....	OLIG-PRIO	PENN-DOUGLAS L		PENN-GRANITE WASH	
GEOLOGIC PROVINCE CODE...	220	360		360	
DEPTH, FEET.....	5340	5924		10266	
WELLHEAD PRESSURE, PSIG...	1790	1989		2703	
OPEN FLOW, MCFD.....	1549	6802		2931	
COMPONENT, MOLE PCT					
METHANE.....	90.2	77.7		82.6	
ETHANE.....	3.7	8.2		9.8	
PROPANE.....	0.8	5.6		4.0	
N-BUTANE.....	0.3	1.8		1.1	
ISOBUTANE.....	0.8	0.5		0.5	
N-PENTANE.....	0.0	0.5		0.3	
ISOPENTANE.....	1.1	0.2		0.2	
CYCLOPENTANE.....	0.9	0.1		TRACE	
HEXANES PLUS.....	1.0	0.2		0.2	
NITROGEN.....	0.9	4.6		0.5	
OXYGEN.....	TRACE	0.2		0.0	
ARGON.....	0.0	TRACE		0.0	
HYDROGEN.....	TRACE	TRACE		TRACE	
HYDROGEN SULFIDE**.....	0.0	0.0		0.0	
CARBON DIOXIDE.....	0.3	0.3		0.8	
HELIUM.....	0.01	0.19		0.04	
HEATING VALUE*.....	1167	1202		1200	
SPECIFIC GRAVITY.....	0.665	0.729		0.691	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 124 SAMPLE 19965		INDEX 125 SAMPLE 19897		INDEX 126 SAMPLE 19928	
STATE.....	TEXAS	TEXAS		TEXAS	
COUNTY.....	RUNNELS	SHERMAN		STERLING	
FIELD.....	PIONEER-MILLER	TEXHOMA		CREDO EAST	
WELL NAME.....	HOELSCHER/SCHWERTNER NO. 3A	HARLAND 1-104		MCCINTIRE 21 NO. 4	
API.....	42-399-34459	42-421-30576		42-431-32799	
LOCATION.....	SEC. 527, J.J. BAKINS SUR, A-1	SEC. 104, BLK 1-C, GH&H SUR.		SEC. 21, BLK 23, H&TC SUR, A-2	
OWNER.....	PIONEER ENERGY CORP.	COURSON OIL & GAS, INC.		ATROPOS PRODUCTION CORP.	
COMPLETED.....	96/08/15	95/06/16		95/12/05	
SAMPLED.....	96/12/30	96/01/15		96/04/04	
FORMATION.....	PENN-GARDNER	PENN-MORROW U		PENN-CISCO U	
GEOLOGIC PROVINCE CODE...	425	360		430	
DEPTH, FEET.....	4020	6412		7095	
WELLHEAD PRESSURE, PSIG...	1333	1535		1160	
OPEN FLOW, MCFD.....	1340	6000		4636	
COMPONENT, MOLE PCT					
METHANE.....	71.1 -----	84.2 -----		80.3 -----	
ETHANE.....	10.7 -----	6.9 -----		7.8 -----	
PROPANE.....	5.4 -----	3.7 -----		5.0 -----	
N-BUTANE.....	1.0 -----	0.9 -----		1.3 -----	
ISOBUTANE.....	0.5 -----	0.3 -----		0.4 -----	
N-PENTANE.....	0.1 -----	0.2 -----		0.3 -----	
ISOPENTANE.....	0.2 -----	0.1 -----		0.1 -----	
CYCLOPENTANE.....	0.0 -----	0.0 -----		TRACE	
HEXANES PLUS.....	0.0 -----	0.0 -----		0.1 -----	
NITROGEN.....	10.6 -----	2.7 -----		4.0 -----	
OXYGEN.....	TRACE -----	0.5 -----		0.1 -----	
ARGON.....	TRACE -----	TRACE -----		TRACE -----	
HYDROGEN.....	TRACE -----	TRACE -----		TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----		0.0 -----	
CARBON DIOXIDE.....	0.1 -----	0.3 -----		0.5 -----	
HELIUM.....	0.30 -----	0.17 -----		0.14 -----	
HEATING VALUE*.....	1113 -----	1124 -----		1162 -----	
SPECIFIC GRAVITY.....	0.733	0.665		0.700	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 127 SAMPLE 19992			INDEX 128 SAMPLE 19921			INDEX 129 SAMPLE 19888		
STATE.....	TEXAS		TEXAS			TEXAS		
COUNTY.....	SUTTON		SUTTON			SUTTON		
FIELD.....	J. D. SLADE		MEME			SONORA		
WELL NAME.....	ALLISON B NO. 1		HARDGRAVE 8 NO. 1			STEEN NO. 40		
API.....	42-435-34666		42-435-00105			42-435-34491		
LOCATION.....	SEC. 66, BLK B, HB&WT SUR, A-1		SEC. 8, J.A. ROBBINS SUR, A-14			SEC. 11, GC&SF SUR, A-146		
OWNER.....	CYCLONE EXPLORATION, INC.		CARAWAY OPERATING CO.			MERIDIAN OIL, INC.		
COMPLETED.....	97/02/06		95/06/14			95/06/16		
SAMPLED.....	97/07/00		96/03/14			95/10/30		
FORMATION.....	MISS-MISSISSIPPIAN		PERM-WOLFCAMP			PENN-CANYON		
GEOLOGIC PROVINCE CODE...	430		430			430		
DEPTH, FEET.....	6445		2039			5228		
WELLHEAD PRESSURE, PSIG...	1639		780			420		
OPEN FLOW, MCFD.....	3609		7502			720		
COMPONENT, MOLE PCT								
METHANE.....	86.6	-----	81.5	-----		85.1	-----	
ETHANE.....	4.6		1.6			7.0		
PROPANE.....	1.4	-----	1.1	-----		3.5	-----	
N-BUTANE.....	0.1		0.2			0.8		
ISOBUTANE.....	0.1	-----	0.2	-----		0.5	-----	
N-PENTANE.....	0.0		0.1			0.1		
ISOPENTANE.....	TRACE	-----	0.1	-----		0.2	-----	
CYCLOPENTANE.....	0.0		0.0			0.0		
HEXANES PLUS.....	0.0	-----	0.0	-----		0.0	-----	
NITROGEN.....	6.5		14.4			2.5		
OXYGEN.....	0.0	-----	0.1	-----		TRACE	-----	
ARGON.....	TRACE		TRACE			TRACE		
HYDROGEN.....	TRACE	-----	TRACE	-----		TRACE	-----	
HYDROGEN SULFIDE**.....	0.0		0.0			0.0		
CARBON DIOXIDE.....	0.5	-----	0.1	-----		0.3	-----	
HELIUM.....	0.18		0.53			0.09		
HEATING VALUE*.....	1005	-----	906	-----		1132	-----	
SPECIFIC GRAVITY.....	0.626		0.642			0.661		

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 130 SAMPLE 19917	INDEX 131 SAMPLE 19922	INDEX 132 SAMPLE 19953
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	TERRELL	TERRELL	TERRELL
FIELD.....	SOUTH BRANCH	SOUTH BRANCH	UNNAMED
WELL NAME.....	UNIVERSITY 36-2 NO. 3	MITCHELL 9 NO. 3	GEASLIN 198 NO. 1
API.....	42-443-30572	42-443-30546	42-443-30554
LOCATION.....	SEC. 2, BLK 36, UNIVERSITY LAN	SEC. 9, BLK 1, CCSD&RGNG SUR,	SEC. 198, BLK Y, TCRR SUR, A-9
OWNER.....	UNION PACIFIC RESOURCES CO.	CHEVRON USA PRODUCTION CO.	HUNT OIL CO.
COMPLETED.....	95/09/02	95/06/03	95/05/23
SAMPLED.....	96/--/00	96/03/21	96/08/15
FORMATION.....	PENN-STRAWN	PENN-STRAWN	PERM-WOLFCAMP
GEOLOGIC PROVINCE CODE...	430	430	430
DEPTH, FEET.....	11464	11322	6152
WELLHEAD PRESSURE, PSIG...	950	2500	1993
OPEN FLOW, MCFD.....	6817	5954	13724
COMPONENT, MOLE PCT			
METHANE.....	81.0 -----	86.5 -----	90.3 -----
ETHANE.....	7.6 -----	7.4 -----	5.4 -----
PROPANE.....	3.1 -----	2.7 -----	2.4 -----
N-BUTANE.....	0.7 -----	0.5 -----	0.2 -----
ISOBUTANE.....	0.4 -----	0.2 -----	0.2 -----
N-PENTANE.....	0.1 -----	0.1 -----	0.0 -----
ISOPENTANE.....	0.1 -----	TRACE -----	0.1 -----
CYCLOPENTANE.....	0.0 -----	0.0 -----	0.0 -----
HEXANES PLUS.....	0.0 -----	0.0 -----	0.0 -----
NITROGEN.....	5.2 -----	1.5 -----	1.2 -----
OXYGEN.....	1.5 -----	0.6 -----	0.1 -----
ARGON.....	0.1 -----	TRACE -----	TRACE -----
HYDROGEN.....	TRACE -----	TRACE -----	TRACE -----
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----	0.0 -----
CARBON DIOXIDE.....	0.3 -----	0.4 -----	0.1 -----
HELIUM.....	0.02 -----	0.03 -----	0.05 -----
HEATING VALUE*.....	1081 -----	1109 -----	1087 -----
SPECIFIC GRAVITY.....	0.676	0.645	0.618

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 133 SAMPLE 19969		INDEX 134 SAMPLE 19957		INDEX 135 SAMPLE 19905	
STATE.....	TEXAS	TEXAS		TEXAS	
COUNTY.....	UPSHUR	UPTON		WARD	
FIELD.....	GLADEWATER B	PLAT ROCK		H S A	
WELL NAME.....	H.S. WHITE 19 NO. 1	UNIVERSITY AU NO. 1		G.W. O'BRIEN ETAL NO. 1105	
API.....	42-459-30869	42-461-02190		42-475-30076	
LOCATION.....	WILLIAM BRATTON SUR, A-57	SEC. 31, BLK 3, UNIVERSITY LAN		SEC. 20, BLK F, G&MMB&A SUR	
OWNER.....	OXY USA, INC.	OXY USA, INC.		CHEVRON USA PRODUCTION CO.	
COMPLETED.....	96/11/16	96/03/26		95/08/31	
SAMPLED.....	97/02/05	96/08/26		96/01/30	
FORMATION.....	JURA-COTTON VALLEY	SILU-FUSSELMAN		PERM-SAN ANDRES	
GEOLOGIC PROVINCE CODE...	260	430		430	
DEPTH, FEET.....	11003	10300		4600	
WELLHEAD PRESSURE, PSIG...	1850	1454		1800	
OPEN FLOW, MCFD.....	2721	2551		8600	
COMPONENT, MOLE PCT					
METHANE.....	90.6	78.7		86.4	
ETHANE.....	5.3	12.2		7.1	
PROPANE.....	1.5	5.4		3.0	
N-BUTANE.....	0.2	1.2		0.8	
ISOBUTANE.....	0.3	0.5		0.3	
N-PENTANE.....	0.0	0.2		0.3	
ISOPENTANE.....	TRACE	0.1		TRACE	
CYCLOPENTANE.....	0.0	0.0		TRACE	
HEXANES PLUS.....	0.0	0.1		0.1	
NITROGEN.....	1.1	1.4		0.9	
OXYGEN.....	0.2	0.1		TRACE	
ARGON.....	TRACE	TRACE		TRACE	
HYDROGEN.....	TRACE	TRACE		TRACE	
HYDROGEN SULFIDE**.....	0.0	0.0		0.0	
CARBON DIOXIDE.....	0.8	0.1		1.0	
HELIUM.....	0.01	0.06		0.02	
HEATING VALUE*.....	1071	1228		1138	
SPECIFIC GRAVITY.....	0.617	0.709		0.659	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 136 SAMPLE 19967		INDEX 137 SAMPLE 19892		INDEX 138 SAMPLE 19586	
STATE.....	TEXAS	TEXAS		TEXAS	
COUNTY.....	WARD	WARD		WHEELER	
FIELD.....	PYOTE S	QUITO B		ALLISON-BRITT	
WELL NAME.....	DOROTHY HILL NO. 4	UNIVERSITY S B 18-32 NO. 1		BRITT NO. 9-3	
API.....	42-475-34235	42-475-34205		42-483-31359	
LOCATION.....	SEC. 69, BLK 34, H&TC SUR, A-2	SEC. 32, BLK. 18, UNIVERSITY L		SEC. 9, BLK. 2, B&B SUR.	
OWNER.....	DEVON ENERGY CORP.	ENRON OIL & GAS CO.		ENRON OIL & GAS CO.	
COMPLETED.....	96/05/22	95/08/09		92/12/14	
SAMPLED.....	97/01/28	95/11/28		93/04/23	
FORMATION.....	PERM-DELAWARE	PERM-DELAWARE, CHERRY CANYON		PERM-GRANITE WASH	
GEOLOGIC PROVINCE CODE...	430	430		360	
DEPTH, FEET.....	6936	6500		12457	
WELLHEAD PRESSURE, PSIG...	1200	850		1600	
OPEN FLOW, MCFD.....	300	250		300	
COMPONENT, MOLE PCT					
METHANE.....	88.7	93.6		85.3	
ETHANE.....	4.6	0.3		8.0	
PROPANE.....	2.1	0.3		3.1	
N-BUTANE.....	0.3	TRACE		1.1	
ISOBUTANE.....	0.5	0.2		0.4	
N-PENTANE.....	0.1	0.0		0.5	
ISOPENTANE.....	0.2	TRACE		0.1	
CYCLOPENTANE.....	0.0	0.0		0.2	
HEXANES PLUS.....	0.0	0.0		0.5	
NITROGEN.....	3.4	1.9		0.6	
OXYGEN.....	0.1	0.0		0.0	
ARGON.....	TRACE	0.0		TRACE	
HYDROGEN.....	TRACE	0.0		TRACE	
HYDROGEN SULFIDE**.....	0.0	0.0		0.0	
CARBON DIOXIDE.....	0.0	3.7		0.3	
HELIUM.....	0.03	0.04		0.03	
HEATING VALUE*.....	1073	970		1195	
SPECIFIC GRAVITY.....	0.629	0.606		0.679	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 139 SAMPLE 19746		INDEX 140 SAMPLE 19503		INDEX 141 SAMPLE 19504	
STATE.....	TEXAS	UTAH		UTAH	
COUNTY.....	WHEELER	GRAND		GRAND	
FIELD.....	WEST PARK	HILL ROARING		HILL ROARING	
WELL NAME.....	HOLMES NO. 17-1	KANE SPRINGS NO. 10-1		KANE SPRINGS NO. 10-1	
API.....	42-483-31450	43-019-31331		43-019-31331	
LOCATION.....	SEC. 17, BLK. RE, R&E SUR.	SEC. 10, T25S, R18E		SEC. 10, T25S, R18E	
OWNER.....	KERR-MCGEE CORP.	WESTERN GAS RESOURCES		WESTERN GAS RESOURCES	
COMPLETED.....	93/12/07	92/11/00		92/11/00	
SAMPLED.....	94/03/28	93/01/04		93/01/04	
FORMATION.....	PENN-MORROW U	PENN-CANE CREEK		PENN-CANE CREEK	
GEOLOGIC PROVINCE CODE...	360	585		585	
DEPTH, FEET.....	15330	NOT GIVEN		NOT GIVEN	
WELLHEAD PRESSURE, PSIG...	6688	4300		4300	
OPEN FLOW, MCFD.....	10800	700		700	
COMPONENT, MOLE PCT					
METHANE.....	96.7 -----	78.7 -----		47.2 -----	
ETHANE.....	0.6 -----	11.4 -----		23.2 -----	
PROPANE.....	0.1 -----	4.5 -----		16.7 -----	
N-BUTANE.....	0.0 -----	1.4 -----		5.8 -----	
ISOBUTANE.....	TRACE -----	0.4 -----		2.2 -----	
N-PENTANE.....	0.0 -----	0.9 -----		2.6 -----	
ISOPENTANE.....	0.0 -----	0.0 -----		0.0 -----	
CYCLOPENTANE.....	0.0 -----	0.3 -----		0.4 -----	
HEXANES PLUS.....	0.1 -----	0.8 -----		1.6 -----	
NITROGEN.....	0.2 -----	1.5 -----		0.2 -----	
OXYGEN.....	TRACE -----	TRACE -----		TRACE -----	
ARGON.....	0.0 -----	0.0 -----		0.0 -----	
HYDROGEN.....	TRACE -----	TRACE -----		TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----		0.0 -----	
CARBON DIOXIDE.....	2.2 -----	0.1 -----		0.1 -----	
HELIUM.....	0.03 -----	0.07 -----		0.01 -----	
HEATING VALUE*.....	997 -----	1267 -----		1804 -----	
SPECIFIC GRAVITY.....	0.583	0.731		1.056	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 142 SAMPLE 19911	INDEX 143 SAMPLE 19973	INDEX 144 SAMPLE 19974
STATE.....	UTAH	UTAH	UTAH
COUNTY.....	GRAND	SAN JUAN	SAN JUAN
FIELD.....	WESTWATER	LISBON	LISBON
WELL NAME.....	WESTWATER NO. 3 UNIT	LISBON C-910	LISBON B-614-A
API.....	43-019-30853	43-037-31323	43-037-31351
LOCATION.....	SEC. 13, T17S, R23E	SEC. 10, T30S, R24E	SEC. 14, T30S, R24E
OWNER.....	NATIONAL FUEL CORP.	UNOCAL	UNOCAL
COMPLETED.....	95/10/05	87/08/00	88/07/00
SAMPLED.....	96/02/14	97/03/18	97/03/18
FORMATION.....	CRET-MANCOS B	DEVO-MCCRACKEN	DEVO-MCCRACKEN
GEOLOGIC PROVINCE CODE...	585	585	585
DEPTH, FEET.....	2690	8384	8932
WELLHEAD PRESSURE, PSIG...	280	45	80
OPEN FLOW, MCFD.....	100	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE.....	82.0	52.7	70.0
ETHANE.....	10.0	14.2	10.9
PROPANE.....	5.0	9.6	5.1
N-BUTANE.....	1.2	3.9	1.5
ISOBUTANE.....	0.6	2.2	0.9
N-PENTANE.....	0.2	1.7	0.4
ISOPENTANE.....	0.1	0.1	0.1
CYCLOPENTANE.....	0.0	0.3	TRACE
HEXANES PLUS.....	0.1	1.2	0.2
NITROGEN.....	0.4	8.1	10.3
OXYGEN.....	TRACE	0.0	0.0
ARGON.....	TRACE	0.0	TRACE
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.4	5.7	0.2
HELIUM.....	0.03	0.36	0.54
HEATING VALUE*.....	1217	1391	1147
SPECIFIC GRAVITY.....	0.694	0.970	0.752

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

		INDEX 145	INDEX 146	INDEX 147
		SAMPLE 19975	SAMPLE 19530	SAMPLE 19725
STATE.....	UTAH	WYOMING	WYOMING	
COUNTY.....	SAN JUAN	FREMONT	FREMONT	
FIELD.....	LISBON	FULLER RESERVOIR	LONG BUTTE	
WELL NAME.....	LISBON B-810	FULLER NO. 15-24	LONG BUTTE NO. 5	
API.....	43-037-31433	49-013-21630	49-013-21127	
LOCATION.....	SEC. 10, T30S, R24E	SEC. 24, T36N, R94W	SEC. 36, T39N, R92W	
OWNER.....	UNOCAL	BERENERGY CORP.	W. A. MONCRIEF JR., CO.	
COMPLETED.....	88/09/00	91/11/18	93/02/01	
SAMPLED.....	97/03/18	93/02/11	94/02/21	
FORMATION.....	DEVO-MCCRACKEN	PALB-FORT UNION L	CRET-SUSSEX B	
GEOLOGIC PROVINCE CODE...	585	530	530	
DEPTH, FEET.....	8609	4080	18286	
WELLHEAD PRESSURE, PSIG...	93	NOT GIVEN	3500	
OPEN FLOW, MCFD.....	NOT GIVEN	1739	3000	
COMPONENT, MOLE PCT				
METHANE.....	56.9	97.2	96.9	
ETHANE.....	13.9	1.3	0.1	
PROPANE.....	8.2	0.2	0.1	
N-BUTANE.....	2.2	0.0	0.0	
ISOBUTANE.....	1.4	0.2	TRACE	
N-PENTANE.....	0.7	0.0	0.0	
ISOPENTANE.....	0.1	0.0	TRACE	
CYCLOPENTANE.....	0.1	0.0	0.0	
HEXANES PLUS.....	0.3	0.1	0.0	
NITROGEN.....	15.4	0.2	0.1	
OXYGEN.....	0.0	TRACE	TRACE	
ARGON.....	TRACE	TRACE	0.0	
HYDROGEN.....	TRACE	TRACE	TRACE	
HYDROGEN SULFIDE**.....	0.0	0.0	0.0	
CARBON DIOXIDE.....	0.2	0.7	2.8	
HELIUM.....	0.59	0.01	TRACE	
HEATING VALUE*.....	1210	1025	985	
SPECIFIC GRAVITY.....	0.847	0.577	0.584	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 148 SAMPLE 19983		INDEX 149 SAMPLE 19694		INDEX 150 SAMPLE 19986
STATE.....	WYOMING		WYOMING		WYOMING
COUNTY.....	LINCOLN		LINCOLN		LINCOLN
FIELD.....	FIGURE FOUR CANYON		GREEN RIVER BEND		SHUTE CREEK
WELL NAME.....	FIGURE FOUR CANYON NO. 4-12		NAMES HILL UNIT NO. 1		HAMS FORK FEDERAL NO. 24-2
API.....	49-023-21301		49-023-20918		49-023-21270
LOCATION.....	SEC. 12, T26N, R113W		SEC. 35, T26N, R113W		SEC. 24, T22N, R133W
OWNER.....	ENRON OIL & GAS CO.		YATES PETROLEUM CORP.		TEXACO EXPL. & PROD., INC.
COMPLETED.....	97/02/06		93/04/00		96/10/07
SAMPLED.....	97/05/28		93/12/13		97/06/10
FORMATION.....	CRET-BEAR RIVER		CRET-FRONTIER		CRET-FRONTIER & DAKOTA
GEOLOGIC PROVINCE CODE...	535		535		535
DEPTH, FEET.....	9102		9950		11877
WELLHEAD PRESSURE, PSIG...	3200		NOT GIVEN		2420
OPEN FLOW, MCFD.....	450		6788		2978
COMPONENT, MOLE PCT					
METHANE.....	96.3 -----		88.6 -----		81.1 -----
ETHANE.....	2.3 -----		6.0 -----		11.8 -----
PROPANE.....	0.6 -----		2.0 -----		4.2 -----
N-BUTANE.....	0.0 -----		0.5 -----		0.5 -----
ISOBUTANE.....	0.2 -----		0.2 -----		0.7 -----
N-PENTANE.....	0.0 -----		0.2 -----		0.0 -----
ISOPENTANE.....	0.0 -----		0.1 -----		0.0 -----
CYCLOPENTANE.....	0.0 -----		0.1 -----		0.0 -----
HEXANES PLUS.....	0.0 -----		0.2 -----		0.0 -----
NITROGEN.....	0.4 -----		1.6 -----		1.2 -----
OXYGEN.....	0.0 -----		0.3 -----		0.1 -----
ARGON.....	0.0 -----		TRACE		TRACE
HYDROGEN.....	TRACE -----		TRACE -----		TRACE -----
HYDROGEN SULFIDE**.....	0.0 -----		0.0 -----		0.0 -----
CARBON DIOXIDE.....	0.3 -----		0.3 -----		0.5 -----
HELIUM.....	0.01 -----		0.03 -----		0.01 -----
HEATING VALUE*.....	1037 -----		1102 -----		1181 -----
SPECIFIC GRAVITY.....	0.578 -----		0.636 -----		0.683 -----

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 151 SAMPLE 19943		INDEX 152 SAMPLE 19591		INDEX 153 SAMPLE 19868	
STATE.....	WYOMING	WYOMING		WYOMING	
COUNTY.....	SUBLETTE	SUBLETTE		SWEETWATER	
FIELD.....	JONAH	TIP TOP		BAXTER BASIN W	
WELL NAME.....	STUD HORSE BUTTE NO. 7-30	BNG NO. 204-19		DEPOT NO. 2	
API.....	49-035-21425	49-035-21164		49-037-23466	
LOCATION.....	SEC. 30, T29N, R108W	SEC. 19, T28N, R113W		SEC. 1, T21N, R104W	
OWNER.....	SNYDER OIL CORP.	ENRON OIL & GAS CO.		YATES PETROLEUM CORP.	
COMPLETED.....	95/11/13	92/12/18		94/12/23	
SAMPLED.....	96/06/20	93/04/30		95/05/12	
FORMATION.....	CRET-MESAVERDE	CRET-BAXTER I & II		JURA-MORRISON	
GEOLOGIC PROVINCE CODE...	535	535		535	
DEPTH, FEET.....	9867	4269		6736	
WELLHEAD PRESSURE, PSIG...	3200	1233		1750	
OPEN FLOW, MCFD.....	2100	748		512	
COMPONENT, MOLE PCT					
METHANE.....	91.7 -----	83.9 -----		90.5 -----	
ETHANE.....	5.0 -----	3.9 -----		3.9 -----	
PROPANE.....	1.6 -----	1.3 -----		1.7 -----	
N-BUTANE.....	0.3 -----	0.5 -----		0.6 -----	
ISOBUTANE.....	0.3 -----	0.1 -----		0.2 -----	
N-PENTANE.....	0.1 -----	0.2 -----		0.2 -----	
ISOPENTANE.....	0.1 -----	0.1 -----		0.2 -----	
CYCLOPENTANE.....	0.0 -----	0.0 -----		0.0 -----	
HEXANES PLUS.....	0.1 -----	0.2 -----		0.1 -----	
NITROGEN.....	0.3 -----	9.3 -----		2.0 -----	
OXYGEN.....	TRACE -----	0.2 -----		0.1 -----	
ARGON.....	TRACE -----	0.1 -----		TRACE -----	
HYDROGEN.....	TRACE -----	TRACE -----		TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----		0.0 -----	
CARBON DIOXIDE.....	0.4 -----	0.3 -----		0.4 -----	
HELIUM.....	0.01 -----	0.06 -----		0.04 -----	
HEATING VALUE*.....	1094 -----	995 -----		1080 -----	
SPECIFIC GRAVITY.....	0.616	0.648		0.625	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 154 SAMPLE 19987		INDEX 155 SAMPLE 19962		INDEX 156 SAMPLE 19964	
STATE.....	WYOMING	WYOMING		WYOMING	
COUNTY.....	SWEETWATER	SWEETWATER		SWEETWATER	
FIELD.....	ROBIN	STAGE COACH DRAW		TABLE ROCK	
WELL NAME.....	GOVERNMENT UNION NO. 4	STAGE COACH DRAW UNIT NO. 1		TABLE ROCK UNIT NO. 41	
API.....	49-037-23638	49-037-23151		49-037-21461	
LOCATION.....	SEC. 8, T19N, R97W	SEC. 32, T23N, R107W		SEC. 19, T19N, R97W	
OWNER.....	TEXACO EXPL. & PROD., INC.	TEXACO EXPL. & PROD., INC.		TEXACO EXPL. & PROD., INC.	
COMPLETED.....	96/12/10	93/08/09		96/04/14	
SAMPLED.....	97/06/10	96/12/11		96/12/09	
FORMATION.....	JURA-NUGGET	CRET-ALMOND		CRET-BLAIR	
GEOLOGIC PROVINCE CODE...	535	535		535	
DEPTH, FEET.....	16118	7939		8764	
WELLHEAD PRESSURE, PSIG...	4450	400		2500	
OPEN FLOW, MCFD.....	5100	1000		350	
COMPONENT, MOLE PCT					
METHANE.....	97.6 -----	76.1 -----		86.8 -----	
ETHANE.....	0.7 -----	11.1 -----		7.1 -----	
PROPANE.....	0.1 -----	5.4 -----		3.1 -----	
N-BUTANE.....	0.0 -----	1.1 -----		0.7 -----	
ISOBUTANE.....	TRACE -----	1.0 -----		0.6 -----	
N-PENTANE.....	0.0 -----	0.3 -----		0.1 -----	
ISOPENTANE.....	TRACE -----	0.3 -----		0.2 -----	
CYCLOPENTANE.....	0.0 -----	TRACE -----		0.0 -----	
HEXANES PLUS.....	0.0 -----	0.1 -----		0.1 -----	
NITROGEN.....	0.1 -----	0.7 -----		0.5 -----	
OXYGEN.....	0.1 -----	0.1 -----		0.1 -----	
ARGON.....	0.0 -----	TRACE -----		0.0 -----	
HYDROGEN.....	TRACE -----	TRACE -----		TRACE -----	
HYDROGEN SULFIDE**.....	0.0 -----	0.0 -----		0.0 -----	
CARBON DIOXIDE.....	1.4 -----	3.7 -----		0.8 -----	
HELIUM.....	0.01 -----	0.01 -----		0.01 -----	
HEATING VALUE*.....	1006 -----	1216 -----		1149 -----	
SPECIFIC GRAVITY.....	0.574 -----	0.751 -----		0.659 -----	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

INDEX 157		INDEX 158	
SAMPLE 19900		SAMPLE 19815	
STATE.....	WYOMING	WYOMING	
COUNTY.....	SWEETWATER	SWEETWATER	
FIELD.....	WANSUTTER	WILLOW RESERVOIR	
WELL NAME.....	CHAMPLIN 261 AMOCO A2	WILLOW RESERVOIR UNIT NO. 1	
API.....	49-037-23495	49-037-22907	
LOCATION.....	SEC. 33, T18N, R94W	SEC. 17, T16N, R95W	
OWNER.....	AMOCO PRODUCTION CO.	UNION PACIFIC RESOURCES CO.	
COMPLETED.....	95/04/03	92/--/00	
SAMPLED.....	96/01/15	94/08/08	
FORMATION.....	CRET-ALMOND U	CRET-ALMOND	
GEOLOGIC PROVINCE CODE...	535	535	
DEPTH, FEET.....	10328	12916	
WELLHEAD PRESSURE, PSIG...	2825	NOT GIVEN	
OPEN FLOW, MCFD.....	2178	4100	
COMPONENT, MOLE PCT			
METHANE.....	83.0	92.7	
ETHANE.....	8.5	2.0	
PROPANE.....	3.0	0.2	
N-BUTANE.....	0.8	TRACE	
ISOBUTANE.....	0.5	0.1	
N-PENTANE.....	0.3	0.0	
ISOPENTANE.....	0.1	0.0	
CYCLOPENTANE.....	TRACE	0.0	
HEXANES PLUS.....	0.1	0.1	
NITROGEN.....	0.4	1.3	
OXYGEN.....	0.2	0.6	
ARGON.....	TRACE	TRACE	
HYDROGEN.....	TRACE	TRACE	
HYDROGEN SULFIDE**.....	0.0	0.0	
CARBON DIOXIDE.....	3.3	3.0	
HELIUM.....	TRACE	TRACE	
HEATING VALUE*.....	1134	987	
SPECIFIC GRAVITY.....	0.690	0.607	

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2

Samples From Pipelines
in the United States

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 19493	INDEX SAMPLE 19490	INDEX SAMPLE 19492
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	MOORE	MOORE	MOORE
FIELD.....	HUTCHINSON W, MOORE & CO.'S	MOORE COUNTY AREA	MOORE COUNTY AREA
LOCATION.....	904 DISCHARGE, STEWART LINE 12	621 STATION, BURNETT DISCHARGE	DUMAS DISCHARGE, 12" LINE
OWNER.....	MAXUS EXPLORATION CO.	MAXUS EXPLORATION CO.	MAXUS EXPLORATION CO.
SAMPLED.....	92/12/01	92/12/02	92/12/01
FORMATION.....	NOT GIVEN	PERM-BROWN DOLOMITE	PERM-BROWN DOLOMITE
GEOLOGIC PROVINCE CODE...	440	440	440
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	268	218	245
FLOW, MCFD.....	13000	5300	13000
COMPONENT, MOLE PCT			
METHANE.....	67.7 -----	73.1 -----	68.9 -----
ETHANE.....	9.0 -----	7.5 -----	7.7 -----
PROPANE.....	8.5 -----	6.4 -----	7.1 -----
N-BUTANE.....	3.6 -----	2.9 -----	3.3 -----
ISOBUTANE.....	0.5 -----	0.4 -----	0.8 -----
N-PENTANE.....	1.1 -----	0.7 -----	0.7 -----
ISOPENTANE.....	0.4 -----	0.6 -----	0.9 -----
CYCLOPENTANE.....	0.1 -----	0.0 -----	0.1 -----
HELANES PLUS.....	0.3 -----	0.3 -----	0.0 -----
NITROGEN.....	8.1 -----	7.6 -----	9.1 -----
OXYGEN.....	TRACE -----	0.0 -----	TRACE -----
ARGON.....	TRACE -----	0.1 -----	TRACE -----
HYDROGEN.....	TRACE -----	0.1 -----	TRACE -----
HYDROGEN SULFIDE.....	0.2 -----	0.0 -----	0.1 -----
CARBON DIOXIDE.....	0.1 -----	0.1 -----	0.9 -----
HELIUM.....	0.33 -----	0.30 -----	0.38 -----
HEATING VALUE*.....	1294 -----	1224 -----	1231 -----
SPECIFIC GRAVITY.....	0.820	0.769	0.804

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 19491	INDEX SAMPLE 19495	INDEX SAMPLE 19497
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	MOORE	MOORE	MOORE
FIELD.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
LOCATION.....	817 STA., EAST RESIDUE FROM PL	DISCHARGE LINES EXCEPT OCHILTR	COMMINGLED DISCHARGE TO SUNRAY
OWNER.....	MAXUS EXPLORATION CO.	MAXUS EXPLORATION CO.	MAXUS EXPLORATION CO.
SAMPLED.....	92/12/02	92/12/01	92/12/01
FORMATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	440	440	440
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	214	253	244
FLOW, MCFD.....	2000	23800	64000
COMPONENT, MOLE PCT			
METHANE.....	91.9 -----	67.0 -----	69.6 -----
ETHANE.....	1.7 -----	8.3 -----	7.3 -----
PROPANE.....	0.1 -----	8.0 -----	6.2 -----
N-BUTANE.....	0.0 -----	4.1 -----	2.7 -----
ISOBUTANE.....	TRACE -----	0.8 -----	0.4 -----
N-PENTANE.....	0.0 -----	1.4 -----	1.0 -----
ISOPENTANE.....	0.0 -----	0.5 -----	0.2 -----
CYCLOPENTANE.....	0.0 -----	0.3 -----	0.2 -----
HEXANES PLUS.....	0.0 -----	0.9 -----	0.4 -----
NITROGEN.....	5.6 -----	8.0 -----	11.3 -----
OXYGEN.....	0.1 -----	TRACE -----	0.1 -----
ARGON.....	0.1 -----	TRACE -----	0.1 -----
HYDROGEN.....	0.3 -----	TRACE -----	TRACE -----
HYDROGEN SULFIDE.....	0.0 -----	0.2 -----	0.1 -----
CARBON DIOXIDE.....	TRACE -----	0.2 -----	0.2 -----
HELIUM.....	0.27 -----	0.33 -----	0.51 -----
HEATING VALUE*.....	967 -----	1341 -----	1175 -----
SPECIFIC GRAVITY.....	0.586	0.849	0.782

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 19494	INDEX SAMPLE 19496	INDEX SAMPLE 19603
STATE.....	TEXAS	TEXAS	WYOMING
COUNTY.....	MOORE	MOORE	CARBON
FIELD.....	OCHILTREE COUNTY AREA	SHERMAN CO., TX HUGOTON	MADDEN, BLK BASIN
LOCATION.....	OCHILTREE 20" WITH 12" RUNS	20-22" INLETS	16" WIND RIVER
OWNER.....	MAXUS EXPLORATION CO.	MAXUS EXPLORATION CO.	COLORADO INTERSTATE GAS CO.
SAMPLED.....	92/12/02	92/12/02	93/05/19
FORMATION.....	NOT GIVEN	PERM-CHASE GROUP	NOT GIVEN
GEOLOGIC PROVINCE CODE...	440	440	535
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	278	242	840
FLOW, MCFD.....	112000	25000	112376
COMPONENT, MOLE PCT			
METHANE.....	85.3	72.6	93.9
ETHANE.....	6.3	6.3	2.1
PROPANE.....	3.5	4.0	0.3
N-BUTANE.....	1.5	1.5	0.2
ISOBUTANE.....	0.0	0.0	0.0
N-PENTANE.....	0.7	0.4	0.0
ISOPENTANE.....	TRACE	0.5	TRACE
CYCLOPENTANE.....	0.2	0.2	0.0
HEXANES PLUS.....	0.4	0.0	0.1
NITROGEN.....	1.4	13.9	1.0
OXYGEN.....	0.0	0.1	0.0
ARGON.....	TRACE	0.1	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.6	0.0	2.4
HELIUM.....	0.08	0.67	0.02
HEATING VALUE*.....	1179	1042	1011
SPECIFIC GRAVITY.....	0.683	0.722	0.601

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